SPACE SHUTTLE

AEROTHERMODYNAMIC DATA REPORT

JOHNSON SPACE CENTER

HOUSTON, TEXAS

DATA MANagement services

SPACE DIVISION CHRYSLER CORPORATION

October, 1973

DMS-DR-2032
NASA CR-128,794

VOLUME 2 of 18

RESULTS OF TESTS OA12 AND IA9 IN THE

AMES RESEARCH CENTER UNITARY PLAN WIND TUNNELS

ON AN 0.030-SCALE MODEL OF THE SPACE SHUTTLE

VEHICLE 2A TO DETERMINE AERODYNAMIC LOADS

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for

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Johnson Space Center
National Aeronautics and Space Administration
Houston, Texas

WIND TUNNEL TEST SPECIFICS:

Test Numbers:	ARC 11-707 (A)
	ARC 97-707 (B)
	ARC 87-707 (C)
NASA Series Numbers:	IA9A, B, C and
	OA12A, C
Test Date:	2 April - 17 May, 1973

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ABSTRACT

Tests were conducted in the NASA/ARC Unitary Plan Wind Tunnels during April and May 1973, on an 0.030-scale replica of the Space Shuttle Vehicle Configuration 2A. Aerodynamic loads data were obtained at Mach numbers from 0.6 to 3.5.

The investigation included Tests IA9A, B and C on the integrated (launch) configuration and Tests OA12A and C on the isolated orbiter (entry configuration). The integrated vehicle was tested at angles of attack and sideslip from -8 degrees to +8 degrees. The isolated orbiter was tested at angles of attack from -15 degrees to +40 degrees and angles of sideslip from -10 degrees to +10 degrees as dictated by trajectory considerations. The effects of orbiter/external tank incidence angle and deflected control surfaces on aerodynamic loads were also investigated.

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SCHEDULE OF COEFFICIENTS PLOTTED:

- (A) CN, CLM, CAF versus ALPHA
       CN versus CLM

- (B) CN, CLM, CA, CAF versus ALPHA
       CN versus CLM—

- (C) CN, CLM, CAF versus ALPHA
       CLM versus CN

- (D) CN, CLM, CA, CAF, CL, L/DF versus ALPHA
       CN versus CLM
       CL versus CDF

- (E) CN, CLM, CA, CAF, CL, L/DF versus ALPHA
       CLM versus CN

- (F) CY, CYN, CBL, CAF, CN, CLM versus BETA
       CY versus CYN

- (G) CY, CYN, CBL, CA, CAF, CN, CLM versus BETA
       CY versus CYN

- (H) CY, CYN, CBL, CAF, CN, CLM versus BETA
       CYN versus CY

- (I) CY, CYN, CBL, CA, CAF, CN, CLM, CL versus BETA
       CY versus CYN

INTRODUCTION

The 0.030-scale Aero Loads Space Shuttle model was tested in the Unitary Plan Wind Tunnels at ARC starting April 2, and continuing through May 17, 1973 as follows:

IA9A	11-foot Transonic	April 2 to April 14, 1973
OA12A	11-foot Transonic	April 16 to April 29, 1973
IA9C	8x7-foot Supersonic	April 23 to May 1, 1973
OA12C	8x7-foot Supersonic	May 2 to May 8, 1973
IA9B	9x7-foot Supersonic	May 9 to May 17, 1973

The testing was conducted in all three legs of the Unitary Plan Wind Tunnels to obtain a Mach number range from 0.6 to 3.5. Aerodynamic loads data were obtained for the ascent and entry configurations. The effects of control surface deflections were also investigated.

This report consists of 3 volumes of force data and 15 volumes of pressure data for a total of 18 volumes arranged in the following manner:

VOLUME NO.	CONTENTS
1	IA9A force data
2	IA9B and IA9C force data
3	OA12A and OA12C force data
4	IA9A plotted pressure data
5	IA9B and IA9C plotted pressure data
6	OA12A and OA12C plotted pressure data
7	IA9A tabulated pressure data
	(a) orbiter fuselage
	(b) orbiter base
	(c) upper MPS nozzle
8	IA9A tabulated pressure data
	(a) OMS nozzle
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	(c) OMS pod outside
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9	IA9A tabulated pressure data
	(a) upper wing surface
	(b) left vertical tail surface
	(c) right vertical tail surface
	(d) APU inlet
	(e) SRM booster base
10	IA9A tabulated pressure data
	(a) SRM booster
	(b) external tank
	(c) external tank base

INTRODUCTION (CONTINUED)

INTRODUCTION (CONCLUDED)

NOMENCLATURE
General

SYMBOL	CADSAC SYMBOL	DEFINITION
a		speed of sound; m/sec, ft/sec
C_p	CP	pressure coefficient; $(p_l - p_\infty)/q$
M	MACH	Mach number; V/a
p		pressure; N/m^2, psf
q	Q(NSM) Q(PSF)	dynamic pressure; $1/2\rho V^2$, N/m^2, psf
RN/L	RN/L	unit Reynolds number; per m, per ft
V		velocity; m/sec, ft/sec
α	ALPHA	angle of attack, degrees
β	BETA	angle of sideslip, degrees
ψ	PSI	angle of yaw, degrees
ϕ	PHI	angle of roll, degrees
ρ		mass density; kg/m^3, slugs/ft^3

Reference & C.G. Definitions

A_b		base area; m^2, ft^2
b	BREF	wing span or reference span; m, ft
c.g.		center of gravity
ℓ_{REF} $\bar{c}$	LREF	reference length or wing mean aerodynamic chord; m, ft
S	SREF	wing area or reference area; m^2, ft^2
	MRP	moment reference point
	XMRP	moment reference point on X axis
	YMRP	moment reference point on Y axis
	ZMRP	moment reference point on Z axis

SUBSCRIPTS

b	base
l	local
s	static conditions
t	total conditions
∞	free stream

Body-Axis System

SYMBOL	SADSAC SYMBOL	DEFINITION
C_N	CN	normal-force coefficient; $\dfrac{\text{normal force}}{qS}$
C_A	CA	axial-force coefficient; $\dfrac{\text{axial force}}{qS}$
C_Y	CY	side-force coefficient; $\dfrac{\text{side force}}{qS}$
C_{A_b}	CAB	base-force coefficient; $\dfrac{\text{base force}}{qS}$ $-A_b(p_b - p_\infty)/qS$
C_{A_f}	CAF	forebody axial force coefficient, $C_A - C_{A_b}$
C_m	CLM	pitching-moment coefficient; $\dfrac{\text{pitching moment}}{qS\ell_{REF}}$
C_n	CYN	yawing-moment coefficient; $\dfrac{\text{yawing moment}}{qSb}$
C_ℓ	CBL	rolling-moment coefficient; $\dfrac{\text{rolling moment}}{qSb}$

Stability-Axis System

SYMBOL	SADSAC SYMBOL	DEFINITION
C_L	CL	lift coefficient; $\dfrac{\text{lift}}{qS}$
C_D	CD	drag coefficient; $\dfrac{\text{drag}}{qS}$
C_{D_b}	CDB	base-drag coefficient; $\dfrac{\text{base drag}}{qS}$
C_{D_f}	CDF	forebody drag coefficient; $C_D - C_{D_b}$
C_Y	CY	side-force coefficient; $\dfrac{\text{side force}}{qS}$
C_m	CLM	pitching-moment coefficient; $\dfrac{\text{pitching moment}}{qS\ell_{REF}}$
C_n	CLN	yawing-moment coefficient; $\dfrac{\text{yawing moment}}{qSb}$
C_ℓ	CSL	rolling-moment coefficient; $\dfrac{\text{rolling moment}}{qSb}$
L/D	L/D	lift-to-drag ratio; C_L/C_D
L/D_f	L/DF	lift to forebody drag ratio; C_L/C_{D_f}

NOMENCLATURE (CONTINUED)

ADDITIONS TO STANDARD LIST

SYMBOL	PLOT SYMBOL	DEFINITION
δ_R	RUDDER	rudder, surface deflection angle, positive deflection, trailing edge to the left; degrees.
δ_e	ELEVON	elevon, surface deflection angle, positive deflection, trailing edge down; degrees.
δ_{RF}	RUDFLR	rudder flare, split rudder deflection angle, left split rudder trailing edge left and right split rudder trailing edge right, $\delta_{RF} = (\delta_{RL} + \delta_{RR})/2$, positive deflection; degrees.
i_o	ORBINC	incidence angle between the orbiter and external tank, $i_o = \alpha_t - \alpha_t$; degrees.
β_T	BETAT	angle of sideslip of external tank.
α_T	ALPHAT	angle of attack of external tank.
ℓ_B	LB	length of orbiter body; in.
ℓ_T	LT	length of external tank; in.
ℓ_s	LS	length of SRM booster; in.
ℓ_{NM}	LNM	length of OMS nozzle, positive direction forward of exit plane; in.
ℓ_{NP}	LNP	length of MPS nozzle, positive direction forward of exit plane; in.
$b/2$	BW	wing semi-span; in.
b_V	BV	vertical tail span; in.
x	X	distance from component nose; in.
y	Y	lateral distance from centerline; in.

NOMENCLATURE (CONCLUDED)

SYMBOL	PLOT SYMBOL	DEFINITION
z	Z	vertical distance measured from W.L. 500 (vertical tail reference root chord); in.
c_W	CW	local wing chord; in.
c_V	CV	local vertical tail chord; in.
x/ℓ_B	X/LB	longitudinal position/orbiter body length.
x/ℓ_T	X/LT	longitudinal position/external tank length.
x/ℓ_S	X/LS	longitudinal position/booster length.
x/ℓ_{NM}	X/LNM	longitudinal position/OMS nozzle length.
x/ℓ_{NP}	X/LNP	longitudinal position/MPS nozzle length.
x/c_W	X/CW	local chordwise position/local wing chord length.
x/c_V	X/CV	local chordwise position/local vertical tail chord length.
$y/b/2$	Y/BW	local spanwise position/wing semi-span.
z/b_V	Z/BV	local spanwise position/vertical tail span.

CONFIGURATIONS INVESTIGATED

The 0.030-scale aero loads model was a replica of the Space Shuttle Vehicle 2A. It consisted of four major components: the orbiter, the external oxygen and hydrogen tank (ET) and two solid rocket boosters (SRB).

On the ascent configuration, the orbiter was strut mounted from the ET on a Task Corporation MK XVI 2.5-inch diameter internal balance. The left SRB was strut mounted from the ET on a Task Corporation MK XXII 1.5-inch diameter internal balance. No attempt was made to simulate actual inter-attachments. The ET was sting mounted to the tunnel model support system on a Task Corporation 4.0-inch diameter internal balance. The right SRB was strut mounted symetrically to the left side, but did not contain a balance. The orbiter configuration, designated as O_2A, consisted of $B_{10}C_5D_7W_{87}V_5R_5M_3F_4$.

The entry configuration consisted of the isolated orbiter, sting mounted to the tunnel model support system on a Task Corporation MK XXA 2.5-inch diameter internal balance. Midway through the OA12C test, the MK XXA balance was damaged and was replaced by the MK XXB for the high angles of attack. The orbiter was provided with deflectable elevons by means of interchangeable brackets, deflectable rudder by means of a pin-indexed hinge, and interchangeable rudders to obtain different speed brake flare angles. The main propulsion system engines were removed during entry configuration testing to provide sting clearance. A cover plate was provided for the strut clearance hole.

The orbiter was instrumented with 374 pressure orifices on the left wing, left side of the fuselage, vertical tail, left OMS pod and engine, left and upper MPS engine and the base. The pressures were measured using eleven Scanivalve, Inc., S-type valve modules mounted internally (a five and a six gang unit). When tested in the entry configuration, the MPS pressures were not available for measurement.

The left side of the ET was instrumented with 136 pressure orifices. These pressures were measured by means of 7 Scanivalve, Inc., S-type valve modules configured as one unit of 6 modules and one single. These valves were mounted internally in the tank. The left SRB had one gang of six S-type modules to measure 102 pressures. The right SRB was not instrumented. The pressure transducers used in the valve modules were Statham PM 131 TC differential pressure transducers, with ranges of ± 10 psid, ± 12.5 psid and ± 15 psid. Reference and calibration pressures were measured by the ARC micro manometers.

Some modifications were made to the model at the test site prior to

CONFIGURATIONS INVESTIGATED (CONTINUED)

testing. These were as follows:

1. The forward tip of the ET containing the retro rocket package (Reference NR Drawing VL78-000018) was replaced with a flush 0.90 inch radius nose (Model scale). The new nose had five pressure taps; one in the nose and four more aft of the nose on the vertical and horizontal axis on a 0.315 inch radius.

2. The ET balance cavity was enlarged by one inch on the diameter (from 5 inches to 6 inches) to provide clearance for cable routing and eliminate balance interference.

3. The clearances around both the orbiter and the SRB struts were opened to approximately 1/8 inch to prevent interference.

4. An alternate rudder hinge pin was provided to give a rudder deflection of +15 degrees.

Before and during the tests various model discrepancies developed or were discovered. These were generally minor and had only a negligible, if any, effect on the data. Significant discrepancies are noted below:

1. Pressure orifices P171 and P173 on the OMS pod base were omitted.

2. During the test certain pressure taps developed leaks or became plugged. Data from these taps are questionable and should be used with caution. Difficulties in checking may have resulted in erroneous indications of leakage. Repairs were made to correct leaking or plugged pressure instrumentation, whenever possible, as the test progressed. The following list gives those taps that were indicated as bad on the various leak and response checks:

ARC Facility	Run Nos.	Orifice numbers with questionable pressure data
11'	2-4	72, 163, 427
	5-118	31, 100, 123, 163, 201, 427
	119-160	16, 98, 101, 107, 333, 427
	161-170	16, 98, 101, 107, 333, 427 + 306, 307, 327, 328, 336, 337, 356, 357, 375

CONFIGURATIONS INVESTIGATED (CONCLUDED)

ARC Facility	Run Nos.	Orifice numbers with questionable pressure data
11'	171-182	16, 47, 53, 75, 78, 98, 107, 201, 236, 237, 238, 307, 327, 365, 427
	183-189	Same as (171-182) + 7, 447, 525
	190-211	Same as (171-182)
8'x7'	220-234	20, 21, 24, 74, 326, 327, 336, 424, 427, 752, 868, 871
	235-285	74, 326, 327, 336, 424, 427, 752, 868, 871
	286-300	74, 107, 115, 124, 129, 138, 326, 327, 336, 427
	301-305	74, 326, 327, 336, 427
	306-333	74, 326, 327, 427
9'x7'	340-396	5, 325, 326, 327, 424, 427, 526, 752, 868, 871

TEST FACILITIES DESCRIPTION

Ames 11 x 11-Ft. Transonic

The Ames 11 x 11-Foot Transonic Wind Tunnel is a variable density, closed return, continuous flow type. This tunnel has an adjustable nozzle (two flexible walls) and a slotted test section to permit transonic testing over a Mach number range continuously variable from 0.4 to 1.4.

Ames 8 x 7-Ft. Supersonic

The Ames 8 x 7-Foot Supersonic Wind Tunnel is a closed-return, variable-density tunnel with a 8- by 7-foot rectangular test section. The nozzle has flexible side walls with fixed upper and lower surfaces. Mach number range is continuously variable from 2.45 to 3.5. Tunnel stagnation pressure can be varied from 0.3 to 2.0 atmospheres and Reynolds number per foot varies from 1.0×10^6 to 5.0×10^6.

Ames 9 x 7-Ft. Supersonic

The Ames 9 x 7-Foot Supersonic Wind Tunnel is a variable density, continuous flow type with an adjustable nozzle to permit supersonic testing over a Mach number range continuously variable from 1.5 to 2.5. The nozzle is of the asymmetric, sliding-block type in which the variation of the test section Mach number is achieved by trans- lating, in the streamwise direction, the fixed-contour block that forms the floor of the nozzle.

DATA REDUCTION

Standard procedures were utilized to reduce force and pressure data to coefficient form. The following dimensional constants were applied:

Reference Dimensions and Constants
(Model Scale)

$S_{Ref.} = 2.421 \text{ ft}^2$ Orbiter reference area

$\ell_{Ref.} = 39.849 \text{ in.}$ Orbiter reference length

Base Areas (Model Scale)

A_{BOI}	$= 0.1903 \text{ ft}^2$	Orbiter base area, integrated
A_{BOA}	$= 0.0362$	Orbiter base area, sting mounted
A_{BMPSU}	$= 0.0417$	Orbiter upper MPS base area
A_{BMPSL}	$= 0.0353$	Orbiter lower MPS base area
A_{BACPS}	$= 0.0310$	Orbiter ACPS base area on OMS pod
A_{BOMS}	$= 0.0231$	Orbiter OMS nozzle base area
A_{BPOD}	$= 0.0257$	Orbiter OMS pod base area
A_{CO}	$= 0.0611$	Orbiter sting cavity base area
A_{BNOZ}	$= 0.0564$	SRM nozzle base area
A_{BSKIRT}	$= 0.1729$	SRM nozzle skirt base area
A_{BETI}	$= 0.3189$	ET Base area
A_{CET}	$= 0.1964$	ET Sting cavity base area

TABLE I.

TEST CONDITIONS

MACH NUMBER	REYNOLDS NUMBER (per unit length)	DYNAMIC PRESSURE (pounds/sq. inch)	STAGNATION TEMPERATURE (degrees Fahrenheit)	
0.6	4.0×10^6	540	$120°$ NOM.	
0.9	4.5	800		
1.1	4.0	800		
1.25	3.0	630		
1.4	3.0	650		
1.55	2.8	600		
2.0	2.3	490		
2.5	1.5	300		
3.0	2.0	350	↓	
3.5	2.0	300		

BALANCE UTILIZED: FIVE (5) TASK CORPORATION BALANCES WITH CAPACITIES AS FOLLOWS:

	ISOLATED ORBITER		INTEGRATED VEHICLE		
			ORB	SRB	ET
	MK IX A	MK IX B	MK XIV	MK IX	MK II B
N_F	3000	3000	2400	1250	4000
N_A	3000	3000	2400	1250	4000
Y_F	1500	1500	1200	500	2000
Y_A	1500	1500	1200	500	2000
X	600	600	150	200	1000
R	4000	4000	4000	1000	10,000
SIZE	2.5"	2.5"	2.5"	1.5"	4.0"

COMMENTS: THE MARK IX A, 2.5IN DIA. BALANCE WAS DAMAGED AFTER RUN 319. THE MARK IX B WAS SUBSTITUTED FOR RUN 320 AND SUBSEQUENT RUNS

TABLE II.

TEST: ARC 11-707/160

DATA SET RUN NUMBER COLLATION SUMMARY

DATA SET IDENTIFIER	CONFIGURATION $\phi_{2A} + S_2 + T_g$	SCHD. α	SCHD. β	δe	δR	δFR	to	NO. OF RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE) 0.6	0.9	1.1	1.25	1.4
RBVX01 C2		4	0	0	0	0	15	4	3	5	6	7	
C3		A	0				0.5	5	8	18	28	38	48
04		-8	B					4	9	19	29	39	
05		-6							10	20	30	40	
06		-4							11	21	31	41	
07		-2							12	22	32	42	
08		0						5	13	23	33	43	49
09		2						4	14	24	34	44	
10		4							15	25	35	45	
11		6							16	26	36	46	
12		8				-5			2	17	27	37	47
13		-8	C							91	102		
14		-6								118	111		
15		-4								98	103		
16		-2								117	112		
17		0								99	104		
18		2								116	113		
		4								100	105		

$$\alpha A = -8, -6, -4, -2, 0, 2, 4, 6, 8$$
$$\beta B = -8, -6, -4, -2, 0, 2, 4, 6, 8$$

COEFFICIENTS

$$\beta c = -8, -4, 0, 4, 8$$

α or β SCHEDULES

TABLE II. CONTINUED

TEST: ARC-II-707 (IA 9F.)   DATE: - -   DATA SET/RUN NUMBER COLLATION SUMMARY

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	β	δe	δR	δFR	ω	NO. OF RUNS	0.6	0.9	1.1	1.25
RBMx19	Φ_{24} + S_3 + T_7	6	C	0	-5	0	0.5	2			115	114
20		8			-5						101	106
21		-8		-10							60	69
22		-6									61	70
23		-4									62	71
24		-2									63	72
25		0									64	73
26		2									55	74
27		4									66	75
28		6									67	76
29		8									68	77
30		-8			-15						78	88
31		-6									79	89
32		-4									80	90
33		-2									81	91
34		0									82	92
35		2									83	93
36		4									84	94

MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE)

TEST RUN NUMBERS

α OR β SCHEDULES   COEFFICENTS

IDVAR (1)   IDVAR (2)   NDV

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TABLE II. CONTINUED

TEST: ARC II-707(I 1-)   DATA SET/RUN NUMBER COLLATION SUMMARY   DATE:

DATA SET IDENTIFIER	CONFIGURATION	SCHD		PARAMETERS/VALUES					NO. OF RUNS	MACH NUMBERS (OF LG TABULATE INDEPENDENT VARIABLE)				
		α	β	δ_e	δ_R	δ_{FR}	c	Zc		0.6	0.9	1.1	1.25	
RBMx37	$Q_{2A} + S_2 + T_9$	6	C	0	-15	0	05	2				55	55	
38		8			-15							57	56	
39		-3			-5							50	55	
40		-4										51	56	
41		0										52	57	
42		4										53	58	
5		8										54	59	
44		A	0		0		-1.2	4		107	108	109	110	

α OR β SCHEDULES

COEFFICIENTS

TABLE II. CONTINUED

TEST: ARC 91-707 (IA926)   DATA SET/RUN NUMBER COLLATION SUMMARY   DATE 5-17-73

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α β	δe	δR	io	δRF	NO. OF RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE) 1.55	2.0
RBφx 01	φ2A + S3 + T9	A 0	0	0	0.5	0	2	341	351
02		8 B	B					342	360
03		6						343	359
04		4						344	358
05		2						345	357
06		0						346	356
07		-2						347	355
08		-4						348	354
09		-6			-15			349	353
10		-8						350	352
11		-8	C					361	367
12		-4						362	363
13		0						363	368
14		4						364	370
15		6						365	371
16		8		-10				366	372
17		-8		-10				373	379
18		-4						374	380

α(A) = -8, 6, -4, -2, 0, 2, 4, 6, 8

β(B) = 8, 6, 4, -4, -6, -8

β(C) = -8, 6, 4, 0, 2, 4, 6, 8

α or β SCHEDULES   COEFFICIENTS

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TABLE II. CONTINUED

DATA SET RUN NUMBER COLLATION SUMMARY

TEST: AFC 5-76 (1476) DATE 5-76

DATA SET IDENT REF	CONFIGURATION	SCHD.	PARAMETERS/VALUES						NO. OF RUNS	RUN NUMBERS (OF ALTERNATE REFERENCE TABLE)	
		β	α	δ_e	δ_R	C_o	δ_{RS}		2.0	1.55	2.0
RPD×19	$\theta_{24} + S_3 + T_9$	0	0	0	-10	0.5	0	2	1.55	375	381
20		4						1		376	382
21		6								377	383
22		8			+15					378	384
23		-8								385	391
24		-4								386	392
25		0								387	393
26		4								388	394
27		6								389	395
28		8								390	396

α OR β SCHEDULES   COEFFICIENTS

TABLE II. CONTINUED

TEST: ARC 8x7-707 (149C) **DATE: 5-1-73**

DATA SET/RUN NUMBER COLLATION SUMMARY

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	δe	δR	δFR	ζo	NO. OF RUNS	2.5	3.0	3.5
RBNx01	Ø2A + S5 + T9	A	A	0	0	0	0.5	3	240	230	220
02		-8	B						241	231	221
03		-6							242	232	222
04		-4							243	233	223
05		-2							244	234	224
06		0							245	235	225
07		2							246	236	226
08		4							247	237	227
09		6					-15		248	238	228
10		8							249	239	229
11		-8	C						267	256	230
12		-4							266	257	251
13		0							265	258	252
14		4							264	259	253
15		6							263	260	254
16		8							262	261	255

α OR β SCHEDULES   COEFFICIENTS

$$\alpha A = -8, -6, -4, -2, 0, 2, 4, 6, 8$$
$$\beta B = -8, -6, -4, -2, 2, 4, 6, 8$$
$$\beta C = -8, -6, -4, 0, 4, 6, 8$$

IDVAR (1) 67   IDVAR (2)   NDV

MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE)

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TABLE II. CONTINUED

TEST: ARC 8x7-707 (IA9C)   DATE: 5-1-73

DATA SET/RUN NUMBER COLLATION SUMMARY

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	SCHD. C	δe	δR	δFR	io	NO. OF RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE) 2.5	3.0	3.5
RBNx17	Ø2A + S3 + T9	-8			0	-10	0	0.5	3	274	280*	268
18		-4								275	281*	269
19		0								276	282*	270
20		4								277	283*	271
21		6								278	284*	272
22		8								279	285*	273

* NOTE: RUNS 280-285: β SCHEDULE IS:

COEFFICENTS
-0.-4.0.4.8
-0.-4.0.4.8

α OR β SCHEDULES   IDVAR (1)   IDVAR (2)   NDV

7 13 19 25 31 37 43 49 55 61 67 75 76

38

TABLE II. CONTINUED

TEST: AMES 11-707 (OA12A) **DATE: 4-23-73**

DATA SET/RUN NUMBER COLLATION SUMMARY

Configuration: $B_{20} C_5 D_7 N_2 F_4 M_3 N_6 V_5 R_3 W_7 E_{10}$

DATA SET IDENTIFIER	SCHD. α	SCHD. β	δ_e	δ_R	δ_{FR}	NO. OF RUNS	MACH 0.6	MACH 0.9
RBPX01 02	0	A	0	0	0	2	119	125
03	5	B					120	126
04	10						121	127
05	15						122	128
06	20						123	129
07	0	C		-10			124	130
08	5						131	136
09	10						132	137
10	15						133	138
11	20			-20			134	139
12	0						135	140
13	5						141	146
14	10						142	147
15	15	D	10				143	148
16	20	D	10				144	149
17	0	D	10	0			145	150
18	5	D	10	0			151	156
							152	160

α or β SCHEDULES

$\alpha\ A = MAX,\ 0,\ 5,\ 10,\ 15,\ 20,\ 25$

$\beta\ B = -10,\ -5,\ 5,\ 10$

$\beta\ C = 3,\ -4,\ 0,\ 4,\ 8$

$\beta\ D = -10,\ 0,\ 10$

$\beta\ E = -5,\ 0,\ 5$

COEFFICIENTS

IDVAR (1)　IDVAR (2)　!DVAR　NDV

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TABLE II. CONTINUED

TEST: AEE 11-737 (0.666) **DATE:** 4-23-73

DATA SET/RUN NUMBER COLLATION SUMMARY

MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE)

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	β	δe	δR	δFR	NO. OF RUNS	0.6	0.9
20	$B_{10}C_5D_7N_2E_{4}M_{13}N_3V_5R_3W_8T E_{10}$	10	D	+10	0	0	2	153	157
21		15						154	159
22		20	C	-10				155	158
23		0						161	166
24		5						162	167
25		10						163	168
26		15						164	169
27		20	E	-20				165	170
28		-4	C					171	182
29		0						172	181
30		5						173	180
31		10						174	179
32		15		0	0	40		175	178
33		20	E					176	177
34		-4	C					183	189
35		0						184	190
36		5						185	191
		10						186	192

COEFFICIENTS

α A = -MAX, 0, 5, 10, 15, 20, 25
β B = -10, -5, 5, 10

α OR β SCHEDULES

β C = -8, -4, 0, 4, 8   IDVAR (1)
β D = -10, 0, 10   β E = -5, 0, 5   IDVAR (2)

NDV

TABLE II. CONTINUED

TEST: AMES 11-707 (0A124)   **DATA SET/RUN NUMBER COLLATION SUMMARY**   **DATE:** 4-23-73

TEST RUN NUMBERS

DATA SET IDENTIFIER	CONFIGURATION	SCHD. PARAMETERS/VALUES α	β	δe	δR	δFR	NO. OF RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE) 0.6	0.9	1.1	1.25	1.4
RBPx37	$B_{10}C_7D_7N_2M_8N_8R_7M_{00}F_{18}$											
38		15	C	0	0	40		187	193			
39		20	C			40		188	194			
40		F	0			0				199	197	195
		0.5	G							200	198	196
41		-4	E		-10			201	202			
42		-4	E		-20			203	204			
43		-4	E	10	0	0		205	206			
44		-4	E	-10				207	208			
45		-4	E	0				210	209			
46		H	0					216	211			
47		-5	I					215	212			
48		-10	I					214	213			

α OR β SCHEDULES

α_F = -4.5, -3.5, -1.5, 0.5, 2.5, COEFFICENTS 4.5, 6.6, 8.6, 10, 15

β_G = -8, -4, -2, 0, 2, 4, 8

α_H = 0, -5, -10, -15

β_I = -10, -5, 5, 10

IDVAR (1)   IDVAR (2)   NDV

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TABLE II. CONTINUED

TEST: B1-707 (ØA:2C) DATE: 5-9-73

DATA SET/RUN NUMBER COLLATION SUMMARY

DATA SET IDENTIFIER	CONFIGURATION	SCHD α	SCHD β	δc	δR	δFR	NO. OF RUNS	MACH 1.5	MACH 3.5
PBQx01	3₁0C₁0F₁0N₂Ṅ₃N₈₂V₅R₅V₅T₁₀	A	0	0	0	40	2	290 / 293	286 / 289
02		0	B					242	288
03		10	C					291	287
04		20	C		−20			297	294
05		0	D					298	295
06		10		10	0			299	296
07		20						303	300
08		0						304	301
09		10		−20				305	302
10		20						309	306
11		0		−40				310	307
12		10						311	308
13		20						31?	314
14		0						318	315
15		10		0				319	316
16		20	E	0				322	320
17		30	D	0				323	321
18									

COEFFICIENTS

αA = 0, 5, 10, 15, 20
αB = 3₁-3
αE = 15, 20, 25, 30, 35, 40

BC = 63-3-6
2D = 630-3-6

α OR β SCHEDULES

TABLE II. CONCLUDED

DATA SET/RUN NUMBER COLLATION SUMMARY

TEST: 87-707 (ØA12C) DATE: 5-9-73

DATA SET IDENTIFIER	CONFIGURATION	SCHD.		PARAMETERS/VALUES			NO. OF RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE)							
		α	β	δe	δr	δFR		2.5	3.5						
RBØX 19	Bₜₒₜₒₜₒₜₜₜₒₜₒₜₒₜₒ	30	D	0	-20	40	2	325	324						
20		30	D	10	0	40		327	326						
21		30	D	-20	0	40		329	328						
22		20	F	0	0	40		332	330						
23		15	G	0	0	40		333	331						

BF = 10, 6, 0, -6, -10
δG = 6, 2, -6

α OR β
SCHEDULES

COEFFICENTS

IDVAR (1)   IDVAR (2)   NDV

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TABLE III. MODEL COMPONENT DIMENSIONAL DATA

MODEL COMPONENT: B10 Body

GENERAL DESCRIPTION: Fuselage, 2A Configuration, Lightweight Orbiter, per

Rockwell Lines VL70-000089 "B."

Scale Model = .030

DRAWING NUMBER: VL70-000089 "B"
VL70-000092, 93, 94 "A"

DIMENSIONS:	FULL-SCALE	MODEL SCALE
Length $\sim$ IN	1328.3	39.8490
Max. Width $\sim$ IN (@X_o = 1528.3)	265.0	7.9500
Max. Depth $\sim$ IN. (@X_o = 1480.52)	248.0	7.4400
Fineness Ratio	5.012	5.012
Area $\sim$ Ft^2		
Max. Cross-Sectional	456.4	.41076
Planform		
Wetted		
Base		

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TABLE III. (CONTINUED)

MODEL COMPONENT: Canopy - C5

GENERAL DESCRIPTION: 2A Configuration per Lines VL70-000092

_____

_____

Scale Model = .030

DRAWING NUMBER: VL70-000092

DIMENSIONS:	FULL-SCALE	MODEL SCALE
Length (STA FWD Bulkhead)	391.0	11.730
Max. Width (T.E. Bulkhead)	560.0	16.800
Max. Depth (WP = 42.9 22 to = 500)		
Fineness Ratio		
Area		
Max. Cross-Sectional		
Planform		
Wetted		
Base		

TABLE III. (CONTINUED)

MODEL COMPONENT: Manipulator Housing D-7

GENERAL DESCRIPTION: 2A Configuration per Rockwell Lines VL70-000093

Scale Model = .030

DRAWING NUMBER: VL70-000093

DIMENSIONS:	FULL-SCALE	MODEL SCALE
Length ~ IN.	881.00	26.430
Max. Width ~ IN.	51.00	1.530
Max. Depth ~ IN.	23.00	.690
Fineness Ratio		
Area		
Max. Cross-Sectional		
Planform		
Wetted		
Base		

C Fuselage   BP = 0.00

WP = 500.0 IN. FS

X.426.0 to 1307.0 IN. FS

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TABLE III. (CONTINUED)

MODEL COMPONENT: WING-W87 New Light Weight Orbiter

GENERAL DESCRIPTION: Orbiter Configuration Per Lines VL70-000093.

NOTE: (Dihedral) Angle is defined at the lower surface of the Wing at the 75.33%

element line projected into a plane perpendicular.

Scale Model = .030

TEST NO.

DWG. NO. VL70-000093

DIMENSIONS:

	FULL-SCALE	MODEL SCALE
TOTAL DATA		
Area (Theo.) Ft^2		
Planform	2690.00	2.42100
Span (Theo In.	936.68	28.10040
Aspect Ratio	2.265	2.265
Rate of Taper	1.177	1.177
Taper Ratio	0.200	0.06002
Dihedral Angle, degrees	3.5000	3.50
Incidence Angle, degrees	3.000	+3.00
Aerodynamic Twist, degrees	3.500	+3.000
Sweep Back Angles, degrees		
Leading Edge	45.00	45.00
Trailing Edge	-10.24	-10.24
0.25 Element Line	35.209	35.209
Chords:		
Root (Theo) B.P.O.O.	689.24	20.67720
Tip, (Theo) B.P. 46834	137.85	4.13550
MAC	474.81	14.24430
Fus. Sta. of .25 MAC	1136.89	34.10670
W.P. of .25 MAC	299.20	8.97840
B.L. of .25 MAC	182.13	5.46390
183.13		
EXPOSED DATA		
Area (Theo) Ft^2	1752.29	1.57706
Span, (Theo) In. BP108 to 468.341	720.68	21.62040
Aspect Ratio	2.058	2.058
Taper Ratio	.2451	.2451
Chords		
Root BP108	562.40	16.8720
Tip 1.00 $\frac{b}{2}$	137.85	4.13550
	393.03	11.79090
MAC	1185.31	35.55930
Fus. Sta. of .25 MAC	300.207	9.00621
W.P. of .25 MAC	143.76	4.31280
B.L. of .25 MAC		
Airfoil Section (Rockwell Mod NASA) XXXX-64		
Root $\frac{b}{2}$ = .425	.10	.10
Tip $\frac{b}{2}$ = 1.00	.12	.12
Data for (1) of (2) Sides		
Leading Edge Cuff Ft^2 Planform Area	120.33	.10830
Leading Edge Intersects Fus M. L. @ Sta	560.0	16.80
Leading Edge Intersects Wing @ Sta	1035.0	31.050

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TABLE III. (CONTINUED)

MODEL COMPONENT: __Elevon E-18__

GENERAL DESCRIPTION: __2A Configuration Por W-87 Rockwell Lines VL 70-000093__

__Data for (1) of (2) Sides__

__Scale Model = .030__

DRAWING NUMBER: __VL 70-000093__

DIMENSIONS:	FULL-SCALE	MODEL SCALE
Area ~ Ft²	205.52	.18497
Span (equivalent) ~ IN.	353.34	10.60020
Inb'd equivalent chord	114.78	3.44340
Outb'd equivalent chord	55.00	1.6500
Ratio movable surface chord/ total surface chord		
At Inb'd equiv. chord	.208	.208
At Outb'd equiv. chord	.400	.400
Sweep Back Angles, degrees		
Leading Edge	0.00	0.00
Tailing Edge	-10.24	-10.24
Hingeline	0.00	0.00
Area Moment (Normal to hinge line) Ft³	1548.07	.04180
Product of Area Moment		

TABLE III.___(CONTINUED)

MODEL COMPONENT: <u>VERTICAL – V5 (Light Weight Orbiter Configuration)</u>

GENERAL DESCRIPTION: <u>Centerline Vertical Tail, Double Wedge Airfoil with Rounded</u>

<u>Leading Edge</u>

Scale Model = .030

DRAWING NUMBER: <u>V170-000095</u>

DIMENSIONS:

	FULL-SCALE	**MODEL SCALE**
TOTAL DATA		
Area (Theo) Ft^2	413.25	.37192
Planform		
Span (Theo) In	315.72	9.47160
Aspect Ratio	1.675	1.675
Rate of Taper	0.507	0.507
Taper Ratio	.404	.404
Sweep Back Angles, degrees		
Leading Edge	45.000	45.000
Trailing Edge	26.249	26.249
0.25 Element Line	41.130	41.130
Chords:		
Root (Theo) WP	268.50	8.05500
Tip (Theo) WP	108.47	3.25410
MAC	199.81	5.99430
Fus. Sta. of .25 MAC	1463.50	43.90500
W. P. of .25 MAC	635.522	19.06566
B. L. of .25 MAC	0.00	0.00
Airfoil Section		
Leading Wedge Angle Deg	10.000	10.000
Trailing Wedge Angle Deg	14.920	14.920
Leading Edge Radius IN.	2.00	.06
Void Area Ft^2	13.17	.01185
Blanketed Area Ft^2	12.67	.01140

TABLE III. (CONTINUED)

MODEL COMPONENT: __R-5 Rudder__

GENERAL DESCRIPTION: __2A Configuration per Rockwell Lines VL 70-000095__

Scale Model = .030

DRAWING NUMBER: __VL 70-000095__

DIMENSIONS:	FULL-SCALE	MODEL SCALE
Area ~ Ft^2	106.38	.09574
Span (equivalent) ~IN.	201.0	6.030
Inb'd equivalent chord	91.585	2.74755
Outb'd equivalent chord	50.833	1.52499
Ratio movable surface chord/ total surface chord		
At Inb'd equiv. chord	0.400	0.400
At Outb'd equiv. chord	0.400	0.400
Sweep Back Angles, degrees		
Leading Edge	34.83	34.83
Tailing Edge	26.25	26.25
Hingeline	34.83	34.83
Area Moment (Normal to hinge line) ~Ft^3 Product of Area and Mean Chord	526.13	.01421

TABLE III. (CONTINUED)

MODEL COMPONENT: OMS Pod -M3

GENERAL DESCRIPTION: 2A Light Weight Configuration per Rockwell Lines

VL70-000094A

Scale Model = .030

DRAWING NUMBER: VL70-000094A

DIMENSIONS:	FULL-SCALE	MODEL SCALE
Length	346.0	10.380
Max. Width $X_- = 1450.0$	108.0	3.240
Max. Depth $X_o = 1500.0$	113.0	3.390
Fineness Ratio		
Area		
Max. Cross-Sectional		
Planform		
Wetted		
Base		

⊏ of OMS Pod

WP = 463.9 IN. FS   WP 400 + 63.9 = 463.9

BP = 80.0 IN. FS

Length 1214.0 to 1560.0' = 346.0 IN. FS

TABLE III. (CONTINUED)

MODEL COMPONENT: F4 Body Flap

GENERAL DESCRIPTION: 2A Configuration per Rockwell Lines VL70-000094A

Scale Model. = .030

DRAWING NUMBER: VL70-000094A

DIMENSIONS:

	FULL-SCALE	MODEL SCALE
Length	84.70	2.541
Max. Width	265.00	7.950
Max. Depth		
Fineness Ratio		
Area $\sim$ Ft^2		
Max. Cross-Sectional		
Planform	142.64	.12838
Wetted		
Base Ft^2	38.65	.03478

TABLE III. (CONTINUED)

MODEL DIMENSIONAL DATA

MODEL COMPONENT : <u>S3-Booster Solid Rocket Motor</u>

GENERAL DESCRIPTION : <u>2A Configuration Per Rockwell Lines VL77-000012</u>

<u>& VL72-000061 "B"</u>

<u>Body of Revolution; Data for (1) of (2) Sides</u>

<u>Scale Model = .030</u>

DRAWING NUMBER : <u>VL 77-000012</u>

DIMENSIONS :	FULL SCALE	MODEL SCALE
Length ~IN.	1732.0	51.96
Max Width (DIA) IN. BSRM Tank	142.0	4.260
Max Depth (DIA) Aft Skirt	259.0	7.77
Fineness Ratio L/D	6.687	6.687
Area ~ Ft^2		
Max. Cross-Sectional (Aft Skirt)	365.87	.32928
Planform		
Wetted		
Base		

Ref.

FS (Orbiter) = 0.00 = 747.99 IN. ET = 200.0 IN. BSRM

WP (BSRM) = WP 400(Orbiter) - 344.413 = 55.587 IN.

BP (Orbiter) = 0.00 = 243.0 IN. BSRM

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TABLE III. (CONCLUDED)

MODEL COMPONENT: EXTERNAL TANK - T9

GENERAL DESCRIPTION: 2A Configuration

NOTE: T9 identical to T8 W/O retro pkg., nose w/30"R F.S.

DRAWING NUMBER   NONE

DIMENSION:	FULL SCALE	MODEL SCALE
Length – IN.	1858	55.740
Max Width (Dia) – IN.	324.0	9.720
Max Depth		
Fineness Ratio L/D	5.73457	5.73457
Area – FT^2		
Max Cross-Sectional	572.56	0.51530
Planform		
Wetted		
Base		
Nose, Radius, IN.	30.0	

ORBITER STATION ~ X_o			RADIAL LOCATION β ~ DEGREES																	
FULL	MODEL	X_o/ℓ	0	20	40	55	70	90	105	110	120	135	142	150	157	162	165	169	172	180
200	6.00	0	20	25	26	27	28	22			30			31						23
210	6.30	.008	21	34	35	36	37	29			39			40						32
225	6.75	.019	24	43	44	45	46	38			48			49						41
245	7.35	.034	33	52	53	54	55	47			57			58						50
280	8.40	.060	42					56											60	59
380	11.40	.136	51												61					
400	12.00	.151																		
410	12.30	.158																		
430	12.90	.173	62	63	64	65	66	67			68		73	69		70		71		72
460	13.80	.196																		
500	15.00	.226	74	75	76	77	78	79			80			81			82			83
560	16.80	.271	84		85		86	87			88			89			90			91
625	18.75	.320	92		93		94	95			96			97			98			99
725	21.75	.395	100		101		102	103			104			105			106			107
880	26.40	.512	108		109		110	111			112			113			114			115
980	29.40	.587	116		117		119	120			121			122			123			124
1080	32.40	.662			118		125	126			127			128						129
1180	35.40	.738			130		131	132	133		134	135		136			137			138
1245	37.35	.787			139		140	141	142		143	144		145			146			
1300	39.00	.828			147		148	149	150		151	152		153			154			
1375	41.25	.885			155		156	157	158		159	160		161			162			
1430	42.90	.926					164	165	166		167	168		169			170			
1480	44.40	.964	163																	
1530[a]	45.90	1.001								171	173									
1530[b]	45.90	1.001								172	174									

a   OMS POD, INSIDE

b   OMS POD, OUTSIDE

a.   Orbiter body

Table IV.   Pressure Orifice Locations

ORBITER BASE

LOCATION	ORIFICE NUMBERS
ORBITER BASE (INTEGRATED)	1, 2, 3, 4
LEFT MPS NOZZLE BASE	5
UPPER MPS NOZZLE BASE	6
ACPS BASE AREA ON OMS POD	7
OMS NOZZLE BASE	8
OMS POD BASE	9
ORBITER BASE (STING MOUNT)	11, 12, 13, 14
ORBITER STING CAVITY	15, 16

BODY FLAP LWR SURFACE

ORB. STA. ~ X_o		θ ~ DEG	
FULL	MODEL	0	40
1580	47.40	175	176

OMS NOZZLE

X ~ IN FWD BASE		θ ~ DEG		
FULL	MODEL	135	160	225
10	0.30	177	175	179
20	0.60		180	

MPS NOZZLE

X ~ IN. FWD BASE		θ ~ DEG					
FULL	MODEL	0	90	135	180	225	270
25	0.75	181	182	183	184	185	186
50	1.50	187	188	189	190	191	192
75	225		193	194	195	196	197

VERTICAL TAIL

WATER PLANE ~ Z_o				X/C ~ THEORETICAL VERTICAL CHORD							
FULL	MODEL	η_v		0	.05	.15	.30	.52	.65	.775	.90
525	15.75	.079		400							
550	16.50	.158	L	410	411	412	413	414	415	416	
			R	510	511	512	513	514	515	516	
600	18.00	.316	L	420	421	422	423	424	425	426	427
			R	520	521	522	523	524	525	526	527
690	20.70	.60	L	430	431	432	433	434	435	436	437
			R	530	531	532	533	534	535	536	537
765	22.95	.84	L	440	441	442	443	444	445	446	447
			R	540	541	542	543	544	545	546	547
792	23.76	.925	L	450	451	452	453	454	455	456	457
			R	550	551	552	553	554	555	556	557

b. Orbiter Base, Body Flap Lower Surface, and Vertical Tail

Table IV. Continued.

ORBITER WING

X/C — THEORETICAL WING CHORD

ORBITER B.P. – Y			U/L	-.49	-.35	-.25	-.15	-.033	0.0	.05	.15	.25	.40	.55	.60	.65	.70	.725	.75	.775	.80	.85	.90	.95
FULL	MODEL	η																						
140	4.20	.299	U / L	200/300	201/301		202/302			203/303		204/304		205/305					206/306		207/307	208/308		209/309
170	5.10	.364	U / L			210	211/311			212/312														
200	6.00	.427	U / L					220		221/321	222/322		223/323	224/324					225/325		226/326	227/327	228/328	229/329
230	7.30	.534	U / L						230	231/331	232/332	233/333	234/334	235/335				236/336		237/337		238/338	239/339	240/340
315	9.45	.673	U / L						250	251/351	252/352	253/353	254/354	255/355			256/356			257/357		258/358		259/359
365	10.95	.780	U / L						260	261/361	262/362	263/363				264/364			265/365			266/366		267/367
415	12.45	.897	U / L						270	271/371	272/372	273/373	274/374		275/375				276/376				277/377	

U – UPPER SURFACE   L – LOWER SURFACE

η	X/C LOCAL WING CHORD
.299	0, .094, .229, .362, .497, .700, .834, .865, .900, .965
.364	0, .086, .246
.427	0, .081, .177, .402, .565, .760, .808, .857, .905, .953
.534	SAME AS THEORETICAL CHORD →
.673	
.780	
.897	

c. Orbiter Wing

Table IV. Continued.

EXTERNAL TANK

TANK STA ~ XT			θ ~ DEG									
FULL	MODEL	XT/LT	0	30	60	90	120	135	150	165	180	270
316.	9.48	0	610									620
317.7	9.53	.001	611			614					619	
400	12.00	.045	621	622	623	624	625		627		629	
520	15.60	.110	631	632	633	634	635		637	638	639	
640	19.20	.174	641	642	643	644	645		647	648	649	
670	20.10	.191	651	652	653	654	655		657	658	659	
710	21.30	.212	661	662	663	664	665		667	668	669	
750	22.50	.234	671	672	673	674	675	676	677	678	679	
850	25.50	.287	681	682	683	684	685		687	688	689	
950	28.50	.341	691	692	693	694	695	696	697	698	699	
1050	31.50	.395	701	702	703	704	705		707	708	709	
1150	34.50	.449	711	712	713	714	715	716	717		719	
1250	37.50	.503	721	722	723	724	725		727	728	729	
1350	40.50	.557	731	732	733	734	735	736	737		739	
1500	45.00	.637	741	742	743	744	745		747	748	749	
1700	51.00	.745	751	752	753		755	756	757		759	
1900	57.00	.853	761	762	763		765	766	767	768		
2040	61.20	.929	771	772	773	774	775	776	777	778		
STING CAVITY			601			603						
BASE			602								604	

d. External Tank

Table IV. Continued.

LEFT SRM

SRM STATION ~ XS			θ ~ DEG							
FULL	MODEL	XS/ℓs	0	45	90	135	180	225	270	315
200	6.00	0	810							
260	7.80	.034	811	812	813	814	815	816	817	818
370	11.10	.097	821	822	823	824	825	826	827	828
400	12.00	.114	831	832	833	834	835	836	837	838
450	13.50	.142	841	842	843	844	845	846	847	848
550	16.50	.199	851	852	853	854	855	856	857	858
700	21.00	.284	861		863		865	866	867	868
850	25.50	.370	871		873		875		877	
1050	31.50	.484	881		883		885			
1250	37.50	.597	891		893		895			
1450	43.50	.711	901		903		905		907	
1650	49.50	.825	911		913		915		917	
1750	52.50	.882	921	922	923	924	925	926	927	928
1790	53.70	.904	931	932	933	934	935	936	937	938
1850	55.50	.939	941	942	943	944	945	946	947	948
1900	57.00	.967	951	952	953	954	955	956	957	958
NOZZLE BASE			801							
SKIRT BASE			802		803		804		805	

e.   Left SRM

Table IV.   Concluded.

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Figure 1. - Axis Systems.

Notes:
1. Positive directions of force cofficients, moment coefficients, and angles are indicated by arrow

2. For clarity, origins of wind and stability axes have been displaced from the center of gravity

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NOTE: MR2 SHOWN IS FOR TEST
OA12 (ORBITER ALONE TESTING)

ELEVON - E_{18}

VERTICAL - V_5

RUDDER - R_5

OMS POD - M_3

BODY FLAP - F_4

OMS NOZZLES - N_8

MPS NOZZLES - N_2

WING - W_{87}

MANIPULATOR HOUSING - D_7

CANOPY - C_6

FUSELAGE - B_{10}

1328.3

876.7

a. Orbiter, O_{2A}

Figure 2. - Model Sketches.

61

SRM   S₃

EXTERNAL TANK   T₉

b.   SRM, S₃, and External Tank, T₉

Figure 2. - Continued.

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NOTES:

- ORBITER INCIDENCE ANGLE RELATIVE TO TANK CL IS 0.5° ORBITER NOSE UP
- ALL DIMENSIONS IN INCHES
- FULL SCALE
- X_O = ORBITER FUSELAGE STATION
- X_T = EXTERNAL TANK FUSELAGE STATION
- X_S = SRM FUSELAGE STATION

EXTERNAL TANK (VL77-000012)

SOLID ROCKET MOTOR (VL77-000018 MOD)

ORBITER (VL70-000089B)

MRP

X_O = 200
X_T = 951
X_S = 402

202

425

2183

c. Integrated Vehicle

Figure 1 (Cont'd)
a. Integrated Vehicle

Figure 2. - Concluded.

63
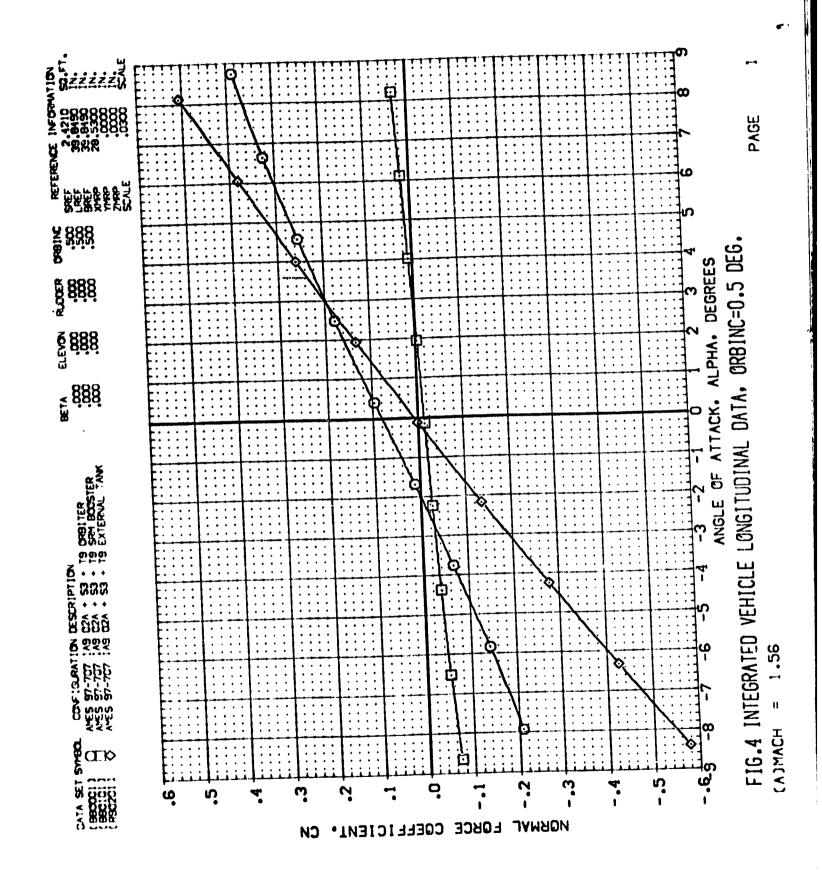
Interference (Launch) Vehicle Mounted in the ARC 8-7 Ft. Tunnel

Figure ... Model 1 Installation Photograph
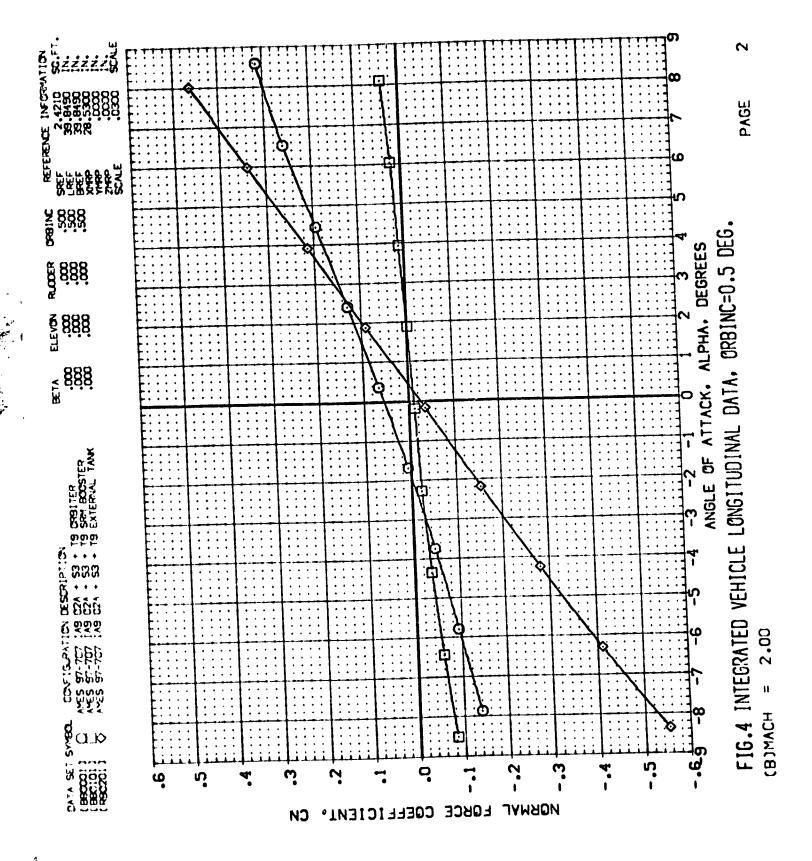
b. Isolated Orbiter (Entry Configuration) Mounted in the ARC 8x7 Ft. Tunnel

Figure 3. - Concluded.

FIG.4 INTEGRATED VEHICLE LONGITUDINAL DATA, ORBINC=0.5 DEG.

(A)MACH = 1.56

PAGE   1

FIG.4 INTEGRATED VEHICLE LONGITUDINAL DATA. ORBINC=0.5 DEG.

(B)MACH = 2.00

PAGE   2

FIG.4 INTEGRATED VEHICLE LONGITUDINAL DATA, ORBINC=0.5 DEG.

(A)MACH = 1.56

PAGE 3

FIG.4 INTEGRATED VEHICLE LONGITUDINAL DATA. ORBINC=0.5 DEG.

(B)MACH = 2.00

PAGE 4

FIG.4 INTEGRATED VEHICLE LONGITUDINAL DATA, ORBINC=0.5 DEG.

(A)MACH = .56

PAGE   5

FIG.4 INTEGRATED VEHICLE LONGITUDINAL DATA. ORBINC=0.5 DEG.

(B)MACH = 2.00

FIG.4 INTEGRATED VEHICLE LONGITUDINAL DATA. ORBINC=0.5 DEG.

(A)MACH = 1.56

PAGE   7

FIG.4 INTEGRATED VEHICLE LONGITUDINAL DATA. ORBINC=0.5 DEG.

(3)MACH = 2.00

PAGE 8

FIG.4 INTEGRATED VEHICLE LONGITUDINAL DATA, ORBINC=0.5 DEG.

CA)MACH = 1.56

PAGE 9

FIG.4 INTEGRATED VEHICLE LONGITUDINAL DATA, ORBINC=0.5 DEG.

(B)MACH = 2.00

PAGE   10

FIG.5 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=8 DEGS., ORBINC=0.500 DEG.

(A)MACH = 1.56

PAGE   11

FIG.5 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=8 DEGS., C3B1C=0.500 DEG.

(B)MACH = 2.00

FIG.5 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=8 DEGS., ORBINC=0.500 DEG.

CA)MACH = :.56

PAGE   :3

FIG.5 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=8 DEGS., ORBINC=0.500 DEG.

(B)MACH = 2.00

PAGE 14

FIG.5 INTEGRATED VEHICLE LAT-DIR. DATA. ALPHA=8 DEGS., ORBINC=0.500 DEG.

(A)MACH = 1.56

PAGE   15

FIG.5 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=8 DEGS., ORBINC=0.500 DEG.

(B)MACH = 2.00

PAGE 16

AXIAL FORCE COEFFICIENT, CA

SIDESLIP ANGLE, BETA, DEGREES

FIG.5 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=8 DEGS., ORBINC=0.500 DEG.

(A)MACH = 1.56   PAGE   17

FIG.5 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=8 DEGS., ORBINC=0.500 DEG.

(B) MACH = 2.00   PAGE   18

FIG.5 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=8 DEGS., ORBINC=0.500 DEG.

(A)MACH = 1.56

PAGE   19

FIG.5 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=8 DEGS., ORBINC=0.500 DEG.

(B)MACH = 2.00

PAGE 20

FIG.5 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=8 DEGS., ORBINC=0.500 DEG.

(A)MACH = 1.56

PAGE 21

FIG.5 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=8 DEGS., ORBINC=0.500 DEG.

(B)MACH = 2.00   PAGE   22

FIG.5 INTEGRATED VEHICLE LAT-DIR. DATA. ALPHA=8 DEGS., ORBINC=0.500 DEG.

(A)MACH = 1.56

PAGE   23

FIG.5 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=8 DEGS., ORBINC=0.500 DEG.

(B)MACH = 2.00

PAGE   24

SIDESLIP ANGLE, BETA, DEGREES

PITCHING MOMENT COEFFICIENT, CLM

FIG.5 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=8 DEGS., ORBINC=0.500 DEG.

(A)MACH = 1.56   PAGE   25

FIG.5 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=8 DEGS., ORBINC=0.500 DEG.

(B)MACH = 2.00

PAGE   26

FIG.6 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=6 DEGS., ORBINC=0.500 DEG.

(A)MACH = 1.56

PAGE 27

FIG.6 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=6 DEGS., ORBINC=0.500 DEG.

(B)MACH = 2.00

PAGE 28

FIG.6 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=6 DEGS., ORBINC=0.500 DEG.

(A)MACH = 1.56

PAGE 29

FIG.6 INTEGRATED VEHICLE LAT-DIR. DATA. ALPHA=6 DEGS., ORBINC=0.500 DEG.

(B)MACH = 2.00

PAGE   30

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	ELEVON	RUDDER	ORBINC
(B6C003)	AMES 97-707 IA9 O2A + S3 + T9 ORBITER	6.000	.000	.000	.500
(B6C103)	AMES 97-707 IA9 O2A + S3 + T9 SRM BOOSTER	6.000	.000	.000	.500
(B6C203)	AMES 97-707 IA9 O2A + S3 + T9 EXTERNAL TANK	6.000	.000	.000	.500

ROLLING MOMENT COEFFICIENT, CBL, (BODY AXIS)

SIDESLIP ANGLE, BETA, DEGREES

FIG.6 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=6 DEGS., ORBINC=0.500 DEG.

(A)MACH = 1.56

PAGE 3:

FIG.6 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=6 DEGS., ORBINC=0.500 DEG.

(B)MACH = 2.00

PAGE 32

FIG.6 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=6 DEGS., ORBINC=0.500 DEG.

(A)MACH = 1.56

PAGE 33

FIG.6 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=6 DEGS., ORBINC=0.500 DEG.

(B)MACH = 2.00

PAGE 34

FIG.6 INTEGRATED VEHICLE LAT-DIR. DATA. ALPHA=6 DEGS., ORBINC=0.500 DEG.

(A)MACH = 1.56

PAGE 35

FIG.6 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=6 DEGS., ORBINC=0.500 DEG.
(B)MACH = 2.00

FIG.6 INTEGRATED VEHICLE LAT-DIR. DATA. ALPHA=6 DEGS., ORBINC=0.500 DEG.

(A)MACH = 1.56

PAGE 37

FIG.6 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=6 DEGS., ORBINC=0.500 DEG.

(B)MACH = 2.00

PAGE 38

FIG.6 INTEGRATED VEHICLE LAT-DIR. DATA. ALPHA=6 DEGS., ORBINC=0.500 DEG.

(A)MACH = .56

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FIG.6 INTEGRATED VEHICLE LAT-DIR. DATA. AL .=6 DEGS., ORBINC=0.500 DEG.

(B)MACH = 2.00

PAGE 4C

FIG.6 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=6 DEGS., ORBINC=0.500 DEG.

(A)MACH = 1.56

PAGE 41

FIG.6 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=6 DEGS., ORBINC=0.500 DEG.

(B)MACH = 2.00

PAGE 42

FIG.7 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=4 DEGS., ORBINC=0.500 DEG.

(A)MACH = 1.56

PAGE 43

FIG.7 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=4 DEGS., ORBINC=0.500 DEG.

(B)MACH = 2.00

PAGE 44

FIG.7 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=4 DEGS., ORBINC=0.500 DEG.

(A)MACH = 1.56

PAGE   45

FIG.7 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=4 DEGS., ORBINC=0.500 DEG.

(B)MACH = 2.00

SIDESLIP ANGLE, BETA, DEGREES

YAWING MOMENT COEFFICIENT, CYN   (BODY AXIS)

FIG.7 INTEGRATED VEHICLE LAT-DIR. DATA. ALPHA=4 DEGS., ORBINC=0.500 DEG.

(A)MACH = 1.56

PAGE 47

FIG.7 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=4 DEGS., ORBINC=0.500 DEG.

(B)MACH = 2.00

PAGE 48

FIG.7 INTEGRATED VEHICLE LAT-DIR. DATA. ALPHA=4 DEGS., ORBINC=0.500 DEG.

(A)MACH = 1.56

PAGE   49

FIG.7 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=4 DEGS., ORBINC=0.500 DEG.

(B)MACH = 2.00

PAGE 50

FIG.7 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=4 DEGS., ORBINC=0.500 DEG.

(A)MACH = 1.56   PAGE   5:

FIG.7 INTEGRATED VEHICLE LAT-DIR. DATA. ALPHA=4 DEGS., ORBINC=0.500 DEG.

(B)MACH = 2.00

PAGE   52

FIG.7 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=4 DEGS., ORBINC=0.500 DEG.

(A)MACH = .56

PAGE 53

FIG.7 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=4 DEGS., ORBINC=0.500 DEG.

(B)MACH = 2.00

PAGE 54

SIDESLIP ANGLE, BETA, DEGREES

NORMAL FORCE COEFFICIENT, CN

FIG.7 INTEGRATED VEHICLE LAT-DIR. DATA. ALPHA=4 DEGS., ORBINC=0.500 DEG.
(A)MACH = 1.56
PAGE 55

FIG.7 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=4 DEGS., ORBINC=0.500 DEG.

(B)MACH = 2.00

PAGE 56

FIG.7 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=4 DEGS., ORBINC=0.500 DEG.

(A)MACH = 1.56

PAGE 57

FIG.7 INTEGRATED VEHICLE LAT-DIR. DATA. ALPHA=4 DEGS., ORBINC=0.500 DEG.

(B)MACH = 2.00   PAGE   58

FIG.8 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=2 DEGS., ORBINC=0.500 DEG.

(A)MACH = 1.56

PAGE 59

FIG.8 INTEGRATED VEHICLE LAT-DIR. DATA. ALPHA=2 DEGS., ORBINC=0.500 DEG.

(B)MACH = 2.00

PAGE 60

FIG.8 INTEGRATED VEHICLE LAT-DIR. DATA. ALPHA=2 DEGS., ORBINC=0.500 DEG.

(A)MACH = 1.56

PAGE   61

FIG.8 INTEGRATED VEHICLE LAT-DIR. DATA. ALPHA=2 DEGS., ORBINC=0.500 DEG.

(B)MACH = 2.00

PAGE 62

FIG.8 INTEGRATED VEHICLE LAT-DIR. DATA. ALPHA=2 DEGS., ORBINC=0.500 DEG.

(A)MACH = 1.56

PAGE 63

FIG.8 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=2 DEGS., ORBINC=0.500 DEG.

(B)MACH = 2.00

PAGE   64

FIG.9 INTEGRATED VEHICLE LAT-DIR. DATA. ALPHA=2 DEGS.. ORBINC=0.500 DEG.

(A)MACH = 1.56

PAGE 65

FIG.8 INTEGRATED VEHICLE LAT-DIR. DATA. ALPHA=2 DEGS.. ORBINC=0.500 DEG.

(B)MACH = 2.00   PAGE   66

FIG.8 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=2 DEGS., ORBINC=0.500 DEG.

(A)MACH = 1.56

PAGE   67

FIG.8 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=2 DEGS., ORBINC=0.500 DEG.

(B)MACH = 2.00

PAGE 68

FIG.8 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=2 DEGS., ORBINC=0.500 DEG.

(A)MACH = 1.56

PAGE 69

FIG.8 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=2 DEGS., ORBINC=0.500 DEG.

(B)MACH = 2.00

PAGE 70

FIG.8 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=2 DEGS., ORBINC=0.500 DEG.

(A)MACH = 1.56

PAGE 71

FIG.8 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=2 DEGS., ORBINC=0.500 DEG.

(B)MACH = 2.00

PAGE   72

FIG.8 INTEGRATED VEHICLE LAT-DIR. DATA. ALPHA=2 DEGS.. ORBINC=0.500 DEG.

YAWING MOMENT COEFFICIENT. CYN (BODY AXIS)

SIDE FORCE COEFFICIENT. CY

(A)MACH = 1.56

PAGE   73

FIG.8 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=2 DEGS., ORBINC=0.500 DEG.

(B)MACH = 2.00

PAGE 74

FIG.9 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=0 DEGS., ORBINC=0.500 DEG.

CA)MACH = 1.56

PAGE 75

FIG.9 INTEGRATED VEHICLE LAT-DIR. DATA. ALPHA=0 DEGS., ORBINC=0.500 DEG.

(B)MACH = 2.00

PAGE 76

FIG.9 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=0 DEGS., ORBINC=0.500 DEG.

(A)MACH = 1.56

PAGE   77

FIG.9 INTEGRATED VEHICLE LAT-DIR. DATA. ALPHA=0 DEGS., ORBINC=0.500 DEG.

(B)MACH = 2.00

PAGE 78

FIG.9 INTEGRATED VEHICLE LAT-DIR. DATA. ALPHA=0 DEGS., ORBINC=0.500 DEG.

(A)MACH = 1.56

PAGE 79

FIG.9 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=0 DEGS., ORBINC=0.500 DEG.

(B)MACH = 2.00

PAGE   80

FIG.9 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=0 DEGS., ORBINC=0.500 DEG.

(A)MACH = 1.56

PAGE   81

FIG.9 INTEGRATED VEHICLE LAT-DIR. DATA. ALPHA=0 DEGS., ORBINC=0.500 DEG.

(B)MACH = 2.00

PAGE 82

FIG.9 INTEGRATED VEHICLE LAT-DIR. DATA. ALPHA=0 DEGS., ORBINC=0.500 DEG.

CAJMACH = 1.56   PAGE   83

FIG.9 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=0 DEGS., ORBINC=0.500 DEG.

(B)MACH = 2.00

PAGE   84

FIG.9 INTEGRATED VEHICLE LAT-DIR. DATA. ALPHA=0 DEGS., ORBINC=0.500 DEG.

(A)MACH = 1.56

FIG.9 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=0 DEGS., ORBINC=0.500 DEG.

(B)MACH = 2.00

PAGE   86

FIG.9 INTEGRATED VEHICLE LAT-DIR. DATA. ALPHA=0 DEGS., ORBINC=0.500 DEG.

(A)MACH = 1.56

PAGE 87

FIG.9 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=0 DEGS., ORBINC=0.500 DEG.

(B)MACH = 2.00

PAGE 88

FIG.9 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=0 DEGS., ORBINC=0.500 DEG.

(A)MACH = 1.56

PAGE 89

FIG.9 INTEGRATED VEHICLE LAT-DIR. DATA. ALPHA=0 DEGS., ORBINC=0.500 DEG.

(B)MACH = 2.00

PAGE   90

FIG.10 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=-2 DEGS., ORBINC=0.500 DEG.

(A)MACH = 1.56

PAGE 91

FIG.10 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=-2 DEGS., ORBINC=0.500 DEG.

(B)MACH = 2.00

PAGE   92

FIG.10 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=-2 DEGS., ORBINC=0.500 DEG.

(A)MACH = 1.56

PAGE 93

FIG.10 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=-2 DEGS., ORBINC=0.500 DEG.

(B)MACH = 2.00

PAGE 94

FIG.10 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=-2 DEGS., ORBINC=0.500 DEG.

(A) MACH = 1.56

PAGE   95

FIG.10 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=-2 DEGS., ORBINC=0.500 DEG.
(B)MACH = 2.00

PAGE 96

FIG.10 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=-2 DEGS., ORBINC=0.500 DEG.

(A)MACH = 1.56

PAGE   97

FIG.10 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=-2 DEGS., ORBINC=0.500 DEG.

(B)MACH = 2.00

AXIAL FORCE COEFFICIENT, CA

SIDESLIP ANGLE, BETA, DEGREES

FIG.10 INTEGRATED VEHICLE LAT-DIR. DATA. ALPHA=-2 DEGS., ORBINC=0.500 DEG.

(A)MACH = 1.56

PAGE 99

FIG.10 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=-2 DEGS., ORBINC=0.500 DEG.

(B)MACH = 2.00

PAGE 100

FIG.10 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=-2 DEGS., ORBINC=0.500 DEG.

(A)MACH = 1.56

PAGE 10:

FIG.10 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=-2 DEGS., ORBINC=0.500 DEG.

(B)MACH = 2.00

PAGE 102

FIG.10 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=-2 DEGS., ORBINC=0.500 DEG.

(A)MACH = 1.56

PAGE 103

FIG.10 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=-2 DEGS., ORBINC=0.500 DEG.

(B)MACH = 2.00   PAGE   104

FIG.10 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=-2 DEGS., ORBINC=0.500 DEG.

CAJMACH = 1.56   PAGE   105

FIG.10 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=-2 DEGS., ORBINC=0.500 DEG.

(B)MACH = 2.00

PAGE 106

FIG.11 INTEGRATED VEHICLE LAT-DIR. DATA. ALPHA=-4 DEGS., ORBINC=0.500 DEG.

(A)MACH = 1.56

PAGE 107

FIG.11 INTEGRATED VEHICLE LAT-DIR. DATA. ALPHA=-4 DEGS., ORBINC=0.500 DEG.

(B)MACH = 2.00

PAGE 108

FIG.11 INTEGRATED VEHICLE LAT-DIR. DATA. ALPHA=-4 DEGS., ORBINC=0.500 DEG.

(A)MACH = 1.56

PAGE 109

FIG.11 INTEGRATED VEHICLE LAT-DIR. DATA. ALPHA=-4 DEGS., ORBINC=0.500 DEG.

(B)MACH = 2.00

PAGE 110

FIG.11 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=-4 DEGS., ORBINC=0.500 DEG.

(A)MACH = 1.56   PAGE   111

FIG.11 INTEGRATED VEHICLE LAT-DIR. DATA. ALPHA=-4 DEGS., ORBINC=0.500 DEG.

(B)MACH = 2.00

PAGE   1:2

FIG.11 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=-4 DEGS., ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.11 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=-4 DEGS., ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.11 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=-4 DEGS., ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.11 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=-4.DEGS., ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.11 INTEGRATED VEHICLE LAT-DIR. DATA. ALPHA=-4 DEGS., ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.11 INTEGRATED VEHICLE LAT-DIR. DATA. ALPHA=-4 DEGS., ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.11 INTEGRATED VEHICLE LAT-DIR. DATA. ALPHA=-4 DEGS., ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.11 INTEGRATED VEHICLE LAT-DIR. DATA. ALPHA=-4 DEGS., ORBINC=0.500 DEG.

(B) MACH = 2.00

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FIG.11 INTEGRATED VEHICLE LAT-DIR. DATA. ALPHA=-4 DEGS., ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.11 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=-4 DEGS., ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.12 INTEGRATED VEHICLE LAT-DIR. DATA. ALPHA=-6 DEGS., ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.12 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=-6 DEGS., ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.12 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=-6 DEGS., ORBINC=0.500 DEG.

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FIG.12 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=-6 DEGS., ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.12 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=-6 DEGS., ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.12 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=-6 DEGS., ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.12 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=-6 DEGS., ORBINC=0.500 DEG.

CA)MACH = 1.56

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FIG.12 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=-6 DEGS., ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.12 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=-6 DEGS., ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.12 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=-6 DEGS., ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.12 INTEGRATED VEHICLE LAT-DIR. DATA. ALPHA=-6 DEGS., ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.12 INTEGRATED VEHICLE LAT-DIR. DATA. ALPHA=-6 DEGS., ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.12 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=-6 DEGS., ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.12 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=-6 DEGS., ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.12 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=-6 DEGS., ORBINC=0.500

(A)MACH = 1.56

FIG.12 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=-6 DEGS., ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.13 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=-8-DEGS., ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.13 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=-8 DEGS., ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.13 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=-8 DEGS., ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.13 INTEGRATED VEHICLE LAT-DIR. DATA. ALPHA=-8 DEGS., ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.13 INTEGRATED VEHICLE LAT-DIR. DATA. ALPHA=-8 DEGS., ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.13 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=-8 DEGS., ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.13 INTEGRATED VEHICLE LAT-DIR. DATA. ALPHA=-8 DEGS., ORBINC=0.500 DEG.

CA)MACH = 1.56

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FIG.13 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=-8 DEGS., ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.13 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=-8 DEGS., ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.13 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=-8 DEGS., ORBINC=0.500 DEG.

(B)MACH = 2.00

PAGE   148

FIG.13 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=-8 DEGS., ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.13 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=-8 DEGS., ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.13 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=-8 DEGS., ORBINC=0.500 DEG.

(A)MACH = .56

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FIG.13 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=-8 DEGS., ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.13 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=-8 DEGS., ORBINC=0.500 DEG.

(A)MACH = .56

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FIG.13 INTEGRATED VEHICLE LAT-DIR. DATA, ALPHA=-8 DEGS., ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.14 INTEG. VEH. LAT'R. DATA, ALPHA=-8,RUDDER=-15 DEGS.,ORBINC=0.500 DEG.

FIG.14 INTEG. VEH. LAT-DIR. DATA, ALPHA=-8,RUDDER=-15 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.14 INTEG. VEH. LAT-DIR. DATA, ALPHA=-8,RUDDER=-15 DEGS.,ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.14 INTEG. VEH. LAT-DIR. DATA, ALPHA=-8,RUDDER=-15 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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ROLLING MOMENT COEFFICIENT, CBL (BODY AXIS)

SIDESLIP ANGLE, BETA, DEGREES

DATA SET SYMBOL   CONFIGURATION DESCRIPTION
(RBC0111)   AMES 97-707 1A9 O2A + S3 + T9 ORBITER
(RBC1111)   AMES 97-707 1A9 O2A + S3 + T9 SRM BOOSTER
(RBC2111)   AMES 97-707 1A9 O2A + S3 + T9 EXTERNAL TANK

ALPHA   ELEVON   RUDDER   ORBINC
-8.000   .000   -15.000   .500
-8.000   .000   -15.000   .500
-8.000   .000   -15.000   .500

REFERENCE INFORMATION
SREF   2.4210   SQ.FT.
LREF   35.8490
BREF   39.8490
XMRP   28.5300
YMRP   .0000
ZMRP   .0000
SCALE   .0300

FIG.14 INTEG. VEH. LAT-DIR. DATA. ALPHA=-8.RUDDER=-15 DEGS..ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.14 INTEG. VEH. LAT-DIR. DATA. ALPHA=-8.RUDDER=-15 DEGS..ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.14 INTEG. VEH. LAT-DIR. DATA, ALPHA=-8,RUDDER=-15 DEGS.,ORBINC=0.500 DEG.

FIG.14 INTEG. VEH. LAT-DIR. DATA, ALPHA=-8, RUDDER=-15 DEGS., ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.14 INTEG. VEH. LAT-DIR. DATA, ALPHA=-8,RUDDER=-15 DEGS.,ORBINC=0.500 DEG.

(A)MACH = .56

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FIG.14 INTEG. VEH. LAT-DIR. DATA, ALPHA=-8,RUDDER=-15 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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SIDESLIP ANGLE, BETA, DEGREES

FOREBODY AXIAL FORCE COEFFICIENT, CAF

FIG.14 INTEG. VEH. LAT-DIR. DATA, ALPHA=-8,RUDDER=-15 DEGS.,ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.14 INTEG. VEH. LAT-DIR. DATA. ALPHA=-8,RUDDER=-15 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.14- INTEG. VEH. LAT-DIR. DATA, ALPHA=-8.,RUDDER=-15 DEGS.,ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.14 INTEG. VEH. LAT-DIR. DATA. ALPHA=-8.RUDDER=-15 DEGS..ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.14 INTEG. VEH. LAT-DIR. DATA, ALPHA=-8.RUDDER=-15 DEGS.,ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.14 INTEG. VEH. LAT-DIR. DATA. ALPHA=-8.RUDDER=-15 DEGS..ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.15 INTEG. VEH. LAT-DIR. DATA, ALPHA=-4,RUDDER=-15 DEGS.,ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.15 INTEG. VEH. LAT-DIR. DATA, ALPHA=-4,RUDDER=-15 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.15 INTEG. VEH. LAT-DIR. DATA, ALPHA=-4,RUDDER=-15 DEGS.,ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.15 INTEG. VEH. LAT-DIR. DATA, ALPHA=-4,RUDDER=-15 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

SIDESLIP ANGLE, BETA, DEGREES

YAWING MOMENT COEFFICIENT, CYN (BODY AXIS)

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FIG.15 INTEG. VEH. LAT-DIR. DATA, ALPHA=-4,RUDDER=-15 DEGS.,ORBINC=0.500 DEG.

(A)MACH = 1.56

FIG.15 INTEG. VEH. LAT-DIR. DATA, ALPHA=-4,RUDDER=-15 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.15 INTEG. VEH. LAT-DIR. DATA. ALPHA=-4.RUDDER=-15 DEGS..ORBINC=0.500 DEG.

CA]MACH = 1.56

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FIG.15 INTEG. VEH. LAT-DIR. DATA, ALPHA=-4,RUDDER=-15 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.15 INTEG. VEH. LAT-DIR. DATA. ALPHA=-4.,RUDDER=-15 DEGS.,ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.15 INTEG. VEH. LAT-DIR. DATA, ALPHA=-4,RUDDER=-15 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.15 INTEG. VEH. LAT-DIR. DATA, ALPHA=-4,RUDDER=-15 DEGS.,ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.15 INTEG. VEH. LAT-DIR. DATA. ALPHA=-4.RUDDER=-15 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.15 INTEG. VEH. LAT-DIR. DATA. ALPHA=-4.RUDDER=-15 DEGS.,ORBINC=0.500 DEG.

(A)MACH = 1.56

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SIDESLIP ANGLE, BETA, DEGREES

PITCHING MOMENT COEFFICIENT, CLM

DATA SET SYMBOL   CONFIGURATION DESCRIPTION
(BBC121)   ☐   AMES 97-7C7 IA9 C2A + S3 + T9 ORBITER
(BBC111)   AMES 97-7C7 IA9 C2A + S3 + T9 SRM BOOSTER
(RBC221)   ◇   AMES 97-7C7 IA9 C2A + S3 + T9 EXTERNAL TANK

	ALPHA	ELEVON	RUDDER	ORBINC
	-4.000	.000	-15.000	.500
	-4.000	.000	-15.000	.500
	-4.000	.000	-15.000	.500

REFERENCE INFORMATION
		SQ.FT.
SREF	2.4210	SQ.FT.
LREF	39.8490	IN.
BREF	39.8490	IN.
XMRP	28.5300	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0300	SCALE

FIG.15 INTEG. VEH. LAT-DIR. DATA. ALPHA=-4,RUDDER=-15 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.15 INTEG. VEH. LAT-DIR. DATA. ALPHA=-4.RUDDER=-15 DEGS..ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.15 INTEG. VEH. LAT-DIR. DATA, ALPHA=-4,RUDDER=-15 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.16 INTEG. VEH. LAT-DIR. DATA, ALPHA=0,RUDDER=-15 DEGS.,ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.16 INTEG. VEH. LAT-DIR. DATA, ALPHA=0,RUDDER=-15 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.16 INTEG. VEH. LAT-DIR. DATA, ALPHA=0, RUDDER=-15 DEGS., ORB'NC=0.500 DEG.

(A)MACH = 1.56

FIG.16 INTEG. VEH. LAT-DIR. DATA. ALPHA=0.RUDDER=-15 DEGS..ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.16 INTEG. VEH. LAT-DIR. DATA. ALPHA=0.RUDDER=-15 DEGS..ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.16 INTEG. VEH. LAT-DIR. DATA, ALPHA=0,RUDDER=-15 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.16 INTEG. VEH. LAT-DIR. DATA, ALPHA=0,RUDDER=-15 DEGS.,ORBINC=0.500 DEG.

(A)MACH = .56

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FIG.16 INTEG. VEH. LAT-DIR. DATA. ALPHA=0.RUDDER=-15 DEGS..ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.16 INTEG. VEH. LAT-DIR. DATA. ALPHA=0.RUDDER=-15 DEGS..ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.16 INTEG. VEH. LAT-DIR. DATA, ALPHA=0,RUDDER=-15 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.16 INTEG. VEH. LAT-DIR. DATA, ALPHA=0.RUDDER=-15 DEGS.,ORBINC=0.500 DEG.

FIG.16 INTEG. VEH. LAT-DIR. DATA, ALPHA=0,RUDDER=-15 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

FIG.16 INTEG. VEH. LAT-DIR. DATA, ALPHA=0,RUDDER=-15 DEGS.,ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.16 INTEG. VEH. LAT-DIR. DATA. ALPHA=0.RUDDER=-15 DEGS..ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.16 INTEG. VEH. LAT-DIR. DATA. ALPHA=0.RUDDER=-15 DEGS..ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.16 INTEG. VEH. LAT-DIR. DATA, ALPHA=0,RUDDER=-15 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.17 INTEG. VEH. LAT-DIR. DATA, ALPHA=4,RUDDER=-15 DEGS.,ORBINC=0.500 DEG.

(A)MACH = .56

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FIG.17 INTEG. VEH. LAT-DIR. DATA, ALPHA=4,RUDDER=-15 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.17 INTEG. VEH. LAT-DIR. DATA, ALPHA=4,RUDDER=-15 DEGS.,ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.17 INTEG. VEH. LAT-DIR. DATA. ALPHA=4.RUDDER=-15 DEGS..ORBINC=0.500 DEG.

(B)MACH = 2.00

FIG.17 INTEG. VEH. LAT-DIR. DATA, ALPHA=4,RUDDER=-15 DEGS.,ORBINC=0.500 DEG.

(A)MACH = 1.56

FIG.17 INTEG. VEH. LAT-DIR. DATA. ALPHA=4,RUDDER=-15 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.17 INTEG. VEH. LAT-DIR. DATA, ALPHA=4,RUDDER=-15 DEGS.,ORBINC=0.500 DEG.

(A)MACH = 1.56

FIG.17 INTEG. VEH. LAT-DIR. DATA, ALPHA=4,RUDDER=-15 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.17 INTEG. VEH. LAT-DIR. DATA. ALPHA=4,RUDDER=-15 DEGS.,ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.17 INTEG. VEH. LAT-DIR. DATA. ALPHA=4,RUDDER=-15 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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REFERENCE INFORMATION

		SQ.FT.
SREF	2.4210	IN.
LREF	39.8490	IN.
BREF	39.8490	IN.
XMRP	28.5300	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0300	SCALE

ALPHA	ELEVON	RUDDER	ORBINC
4.000	.000	-15.000	.500
4.000	.000	-15.000	.500
4.000	.000	-15.000	.500

SIDESLIP ANGLE, BETA, DEGREES

NORMAL FORCE COEFFICIENT, CN

FIG.17 INTEG. VEH. LAT-DIR. DATA, ALPHA=4,RUDDER=-15 DEGS.,ORBINC=0.500 DEG.

(A)MACH = 1.56

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DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	ELEVON	RUDDER	ORBINC
(BCO141)	AMES 97-707 [A9 C2A + S3 + T9 ORBITER	4.000	.000	-15.000	.500
(BC141)	AMES 97-707 [A9 C2A + S3 + T9 SRM BOOSTER	4.000	.000	-15.000	.500
(BSC241)	AMES 97-707 [A9 C2A + S3 + T9 EXTERNAL TANK	4.000	.000	-15.000	.500

NORMAL FORCE COEFFICIENT, CN

SIDESLIP ANGLE, BETA, DEGREES

FIG.17 INTEG. VEH. LAT-DIR. DATA, ALPHA=4, RUDDER=-15 DEGS., ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.17 INTEG. VEH. LAT-DIR. DATA, ALPHA=4,RUDDER=-15 DEGS.,ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.17 INTEG. VEH. LAT-DIR. DATA. ALPHA=4,RUDDER=-15 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.17 INTEG. VEH. LAT-DIR. DATA. ALPHA=4.RUDDER=-15 DEGS.,ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.17 INTEG. VEH. LAT-DIR. DATA, ALPHA=4,RUDDER=-15 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.18 INTEG. VEH. LAT-DIR. DATA, ALPHA=6,RUDDER=-15 DEGS.,ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.18 INTEG. VEH. LAT-DIR. DATA. ALPHA=6.RUDDER=-15 DEGS..ORBINC=0.500 DEG.

(B)MACH = 2.00

FIG.18 INTEG. VEH. LAT-DIR. DATA. ALPHA=6,RUDDER=-15 DEGS.,ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.18 INTEG. VEH. LAT-DIR. DATA, ALPHA=6,RUDDER=-15 DEGS.,ORBINC=0.500 DEG.

SIDESLIP ANGLE, BETA, DEGREES

YAWING MOMENT COEFFICIENT, CYN (BODY AXIS)

(B)MACH = 2.00

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FIG.18 INTEG. VEH. LAT-DIR. DATA. ALPHA=6,RUDDER=-15 DEGS.,ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.18 INTEG. VEH. LAT-DIR. DATA. ALPHA=6.RUDDER=-15 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.18 INTEG. VEH. LAT-DIR. DATA, ALPHA=6.RUDDER=-15 DEGS..ORBINC=0.500 DEG.
(A)MACH = 1.56

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FIG.18 INTEG. VEH. LAT-DIR. DATA, ALPHA=6,RUDDER=-15 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.18 INTEG. VEH. LAT-DIR. DATA, ALPHA=6.RUDDER=-15 DEGS.,ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.18 INTEG. VEH. LAT-DIR. DATA. ALFHA=6.RUDDER=-15 DEGS.,ORBINC=0.500 DEG.
(B)MACH = 2.00

FIG.18 INTEG. VEH. LAT-DIR. DATA, ALPHA=6,RUDDER=-15 DEGS.,ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.18 INTEG. VEH. LAT-DIR. DATA, ALPHA=6,RUDDER=-15 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

FIG.18 INTEG. VEH. LAT-DIR. DATA, ALPHA=6,RUDDER=-15 DEGS.,ORBINC=0.500 DEG.

CA)MACH = 1.56

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FIG.18 INTEG. VEH. LAT-DIR. DATA, ALPHA=6,RUDDER=-15 DEGS.,ORBINC=0.500 DEG.

SIDESLIP ANGLE, BETA, DEGREES

PITCHING MOMENT COEFFICIENT, CLM

(B)MACH = 2.00

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FIG.18 INTEG. VEH. LAT-DIR. DATA, ALPHA=6.RUDDER=-15 DEGS.,ORBINC=0.500 DEG.
(A)MACH = 1.56

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FIG.18 INTEG. VEH. LAT-DIR. DATA, ALPHA=6,RUDDER=-15 DEGS.,ORBINC=0.500 MRG.

(B)MACH = 2.00

FIG.19 INTEG. VEH. LAT-DIR. DATA. ALPHA=8,RUDDER=-15 DEGS.,ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.19 INTEG. VEH. LAT-DIR. DATA, ALPHA=8,RUDDER=-15 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.19 INTEG. VEH. LAT-DIR. DATA, ALPHA=8,RUDDER=-15 DEGS.,ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.19 INTEG. VEH. LAT-DIR. DATA, ALPHA=8,RUDDER=-15 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.19 INTEG. VEH. LAT-DIR. DATA, ALPHA=8,RUDDER=-15 DEGS.,ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.19 INTEG. VEH. LAT-DIR. DATA. ALPHA=8,RUDDER=-15 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.19 INTEG. VEH. LAT-DIR. DATA, ALPHA=8.,RUDDER=-15 DEGS.,ORBINC=0.500 DEG.

(A)MACH = 1.56

PAGE   241

FIG.19 INTEG. VEH. LAT-DIR. DATA. ALPHA=8.RUDDER=-15 DEGS..ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.19 INTEG. VEH. LAT-DIR. DATA, ALPHA=8,RUDDER=-15 DEGS.,ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.19 INTEG. VEH. LAT-DIR. DATA. ALPHA=8.RUDDER=-15 DEGS..ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.19 INTEG. VEH. LAT-DIR. DATA, ALPHA=8,RUDDER=-15 DEGS.,ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.18 INTEG. VEH. LAT-DIR. DATA. ALPHA=8.RUDDER=-15 DEGS..ORBINC=0.500 DEG.

(B)MACH = 2.00

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SIDESLIP ANGLE, BETA, DEGREES

NORMAL FORCE COEFFICIENT, CN

FIG.19 INTEG. VEH. LAT-DIR. DATA. ALPHA=8.RUDDER=-15 DEGS..ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.19 INTEG. VEH. LAT-DIR. DATA, ALPHA=8,RUDDER=-15 DEGS.,CRBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.19 INTEG. VEH. LAT-DIR. DATA, ALPHA=8,RUDDER=-15 DEGS.,ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.19 INTEG. VEH. LAT-DIR. DATA. ALPHA=8,RUDDER=-15 DEGS.,ORBINC=0.500 DEG.

YAWING MOMENT COEFFICIENT, CYN (BODY AXIS)

(B)MACH = 2.00

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FIG.20 INTEG. VEH. LAT-DIR. DATA. ALPHA=-8.RUDDER=-10 DEGS..ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.20 INTEG. VEH. LAT-DIR. DATA. ALPHA=-8.RUDDER=-10 DEGS..ORBINC=0.500 DEG.

(B)MACH = 2.00

FIG.20 INTEG. VEH. LAT-DIR. DATA, ALPHA=-8.RUDDER=-10 DEGS.,ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.20 INTEG. VEH. LAT-DIR. DATA. ALPHA=-8.RUDDER=-10 DEGS.,ORBINC=0.500 DEG.
(B)MACH = 2.00

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FIG.20 INTEG. VEH. LAT-DIR. DATA, ALPHA=-8,RUDDER=-10 DEGS.,ORBINC=0.500 DEG.
(A)MACH = 1.56

FIG.20 INTEG. VEH. LAT-DIR. DATA, ALPHA=-8,RUDDER=-10 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

FIG.20 INTEG. VEH. LAT-DIR. DATA, ALPHA=-8,RUDDER=-10 DEGS.,ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.20 INTEG. VEH. LAT-DIR. DATA. ALPHA=-8,RUDDER=-10 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.20 INTEG. VEH. LAT-DIR. DATA. ALPHA=-8.RUDDER=-10 DEGS..ORBINC=0.500 DEG.

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(A)MACH = 1.56

FIG.20 INTEG. VEH. LAT-DIR. DATA. ALPHA=-8.RUDDER=-10 DEGS..ORBINC=0.500 DEG.

(B)MACH = 2.00

FIG.20 INTEG. VEH. LAT-DIR. DATA, ALPHA=-8.RUDDER=-10 DEGS.,ORBINC=0.500 DEG.

CADMACH = 1.56

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FIG.20 INTEG. VEH. LAT-DIR. DATA, ALPHA=-8,RUDDER=-10 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

FIG.20 INTEG. VEH. LAT-DIR. DATA, ALPHA=-8,RUDDER=-10 DEGS.,ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.20 INTEG. VEH. LAT-DIR. DATA. ALPHA=-8 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.20 INTEG. VEH. LAT-DIR. DATA. ALPHA=-8,RUDDER=-10 DEGS.,ORBINC=0.500 DEG.

(·)MACH = 1.56

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YAWING MOMENT COEFFICIENT, CYN (BODY AXIS)

SIDE FORCE COEFFICIENT, CY

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
[BR0017]	AMES 97-707 IA9 C2A + S3 + T9 ORBITER
[BC017]	AMES 97-707 IA9 C2A + S3 + T9 SRM BOOSTER
[BC0271]	AMES 97-707 IA9 C2A + S3 + T9 EXTERNAL TANK

	ALPHA	ELEVON	RUDDER	ORBINC
	-8.000	.000	-10.000	.500
	-8.000	.000	-10.000	.500
	-8.000	.000	-10.000	.500

REFERENCE INFORMATION

SREF	2.4210	SQ.FT.
LREF	39.8490	IN.
BREF	39.8490	IN.
XMRP	28.5300	IN.
YMRP	.0000	
ZMRP	.0000	
SCALE	.0300	SCALE

FIG.20 INTEG. VEH. LAT-DIR. DATA, ALPHA=-8,RUDDER=-10 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.21 INTEG. VEH. LAT-DIR. DATA, ALPHA=-4.RUDDER=-10 DEGS..ORBINC=0.500 DEG.

(A)MACH = 1.56   PAGE   267

FIG.21 INTEG. VEH. LAT-DIR. DATA. ALPHA=-4.RUDDER=-10 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.21 INTEG. VEH. LAT-DIR. DATA, ALPHA=-4,RUDDER=-10 DEGS.,ORBINC=0.500 DEG.

(A)MACH = 1.56

FIG.21 INTEG. VEH. LAT-DIR. DATA. ALPHA=-4,RUDDER=-10 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.21 INTEG. VEH. LAT-DIR. DATA. ALPHA=-4.RUDDER=-10 DEGS..ORBINC=0.500 DEG.
(A)MACH = 1.56

FIG.21 INTEG. VEH. LAT-DIR. DATA, ALPHA=-4,RUDDER=-10 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.21 INTEG. VEH. LAT-DIR. DATA, ALPHA=-4,RUDDER=-10 DEGS.,ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.21 INTEG. VEH. LAT-DIR. DATA. ALPHA=-4.RUDDER=-10 DEGS..ORBINC=0.500 DEG. .

(B)MACH = 2.00

FIG.21 INTEG. VEH. LAT-DIR. DATA, ALPHA=-4,RUDDER=-10 DEGS.,ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.21 INTEG. VEH. LAT-DIR. DATA, ALPHA=-4,RUDDER=-10 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.21 INTEG. VEH. LAT-DIR. DATA. ALPHA=-4.RUDDER=-10 DEGS..ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.21 INTEG. VEH. LAT-DIR. DATA, ALPHA=-4,RUDDER=-10 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

FIG.21 INTEG. VEH. LAT-DIR. DATA, ALPHA=-4,RUDDER=-10 DEGS.,ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.21 INTEG. VEH. LAT-DIR. DATA, ALPHA=-4,RUDDER=-10 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.21 INTEG. VEH. LAT-DIR. DATA. ALPHA=-4,RUDDER=-10 DEGS.,ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.21 INTEG. VEH. LAT-DIR. DATA. ALPHA=-4,RUDDER=-10 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

FIG.22 INTEG. VEH. LAT-DIR. DATA. ALPHA=0.RUDDER=-10 DEGS..ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.22 INTEG. VEH. LAT-DIR. DATA, ALPHA=0,RUDDER=-10 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.22 INTEG. VEH. LAT-DIR. DATA. ALPHA=0.RUDDER=-10 DEGS..ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.22 INTEG. VEH. LAT-DIR. DATA, ALPHA=0,RUDDER=-10 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.22 INTEG. VEH. LAT-DIR. DATA, ALPHA=0,RUDDER=-1C DEGS.,ORBINC=0.5C0 DEG.

(A)MACH = 1.56

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FIG.22 INTEG. VEH. LAT-DIR. DATA, ALPHA=0,RUDDER=-10 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.22 INTEG. VEH. LAT-DIR. DATA, ALPHA=0.DEGS.,RUDDER=-10 DEGS.,ORBINC=0.500 DEG.

CA)MACH = 1.56

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FIG.22 INTEG. VEH. LAT-DIR. DATA, ALPHA=0,RUDDER=-10 DEGS.,.CRB'VC=0.500 DEG.

(B)MACH = 2.00

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AXIAL FORCE COEFFICIENT, CA

SIDESLIP ANGLE, BETA, DEGREES

FIG.22 INTEG. VEH. LAT-DIR. DATA, ALPHA=0,RUDDER=-10 DEGS.,ORBINC=0.500 DEG.

CAJMACH = 1.56

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FIG.22 INTEG. VEH. LAT-DIR. DATA. ALPHA=0.RUDDER=-10 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.22 INTEG. VEH. LAT-DIR. DATA, ALPHA=0,RUDDER=-10 DEGS.,CRBINC=0.500 DEG.

CADMACH = 1.56

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FIG.22 INTEG. VEH. LAT-DIR. DATA. ALPHA=0,RUDDER=-10 DEGS.,ORBINC=0.500 DEG.

(3)MACH = 2.00

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FIG.22 INTEG. VEH. LAT-DIR. DATA. ALPHA=0.RUDDER=-10 DEGS.,ORBINC=0.500 DEG.

(A)MACH = .56

FIG.22 INTEG. VEH. LAT-DIR. DATA, ALPHA=0.RUDDER=-10 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.22 INTEG. VEH. LAT-DIR. DATA, ALPHA=O,RUDDER=-10 DEGS.,ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.22 INTEG. VEH. LAT-DIR. DATA, ALPHA=0.RUDDER=-10 DEGS.,ORBINC=0.500 DEG.
(B)MACH = 2.00

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FIG.23 INTEG. VEH. LAT-DIR. DATA. ALPHA=4,RUDDER=-10 DEGS.,ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.23 INTEG. VEH. LAT-DIR. DATA, ALPHA=4,RUDDER=-10 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.23 INTEG. VEH. LAT-DIR. DATA, ALPHA=4,RUDDER=-10 DEGS.,ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.23 INTEG. VEH. LAT-DIR. DATA, ALPHA=4,RUDDER=-10 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.23 INTEG. VEH. LAT-DIR. DATA, ALPHA=4,RUDDER=-10 DEGS.,ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.23 INTEG. V.H. LAT-DIR. DATA, ALPHA=4,RUDDER=-10 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.23 INTEG. VEH. LAT-DIR. DATA. ALPHA=4.RUDDER=-10 DEGS..ORBINC=0.500 DEG.
(A)MACH = 1.56

FIG.23 INTEG. VEH. LAT-DIR. DATA, ALPHA=4,RUDDER=-10 DEGS.,ORBINC=0.500 DEG.
(B)MACH = 2.00

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FIG.23 INTEG. VEH. LAT-DIR. DATA, ALPHA=4,RUDDER=-10 DEGS.,ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.23 INTEG. VEH. LAT-DIR. DATA, ALPHA=4,RUDDER=-10 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.23 INTEG. VEH. LAT-DIR. DATA, ALPHA=4,RUDDER=-10 DEGS.,ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.23 INTEG. VEH. LAT-DIR. DATA. ALPHA=4.RUDDER=-10 DEGS..ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.23 INTEG. VEH. LAT-DIR. DATA, ALPHA=4,RUDDER=-10 DEGS.,ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.23 INTEG. VEH. LAT-DIR. DATA, ALPHA=4,RUDDER=-10 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.23 INTEG. VEH. LAT-DIR. DATA, ALPHA=4,RUDDER=-10 DEGS.,ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.23 INTEG. VEH. LAT-DIR. DATA, ALPHA=4,RUDDER=-10 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.24 INTEG. VEH. LAT-DIR. DATA, ALPHA=6,RUDDER=-10 DEGS.,ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.24 INTEG. VEH. LAT-DIR. DATA. ALPHA=6,RUDDER=-10 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.24 INTEG. VEH. LAT-DIR. DATA. ALPHA=6.RUDDER=-10 DEGS.,ORBINC=0.500 DEG.

(A)MACH = .56

FIG.24 INTEG. VEH. LAT-DIR. DATA. ALPHA=6.DEGS..ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.24 INTEG. VEH. LAT-DIR. DATA, ALPHA=6,RUDDER=-10 DEGS.,ORBINC=0.500 DEG.

(A)MACH = .56

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FIG.24 INTEG. VEH. LAT-DIR. DATA, ALPHA=6,RUDDER=-10 DEGS.,ORBINC=0.500 DEG.
(B)MACH = 2.00

FIG.24 INTEG. VEH. LAT-DIR. DATA, ALPHA=6,RUDDER=-10 DEGS.,ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.24 INTEG. VEH. LAT-DIR. DATA, ALPHA=6,RUDDER=-10 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

FIG.24 INTEG. VEH. LAT-DIR. DATA. ALPHA=6.RUDDER=-10 DEGS..ORBINC=0.500 DEG.

(A)MACH = .56

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FIG.24 INTEG. VEH. LAT-DIR. DATA, ALPHA=6,RUDDER=-10 DEGS.,ORBINC=0.500 DEG.
(B)MACH = 2.00

PAGE   32-1

FIG.24 INTEG. VEH. LAT-DIR. DATA, ALPHA=6,RUDDER=-10 DEGS.,ORBINC=0.500 DEG.

(A)MACH = 1.56

FIG.24 INTEG. VEH. LAT-DIR. DATA, ALPHA=6,RUDDER=-10 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.24 INTEG. VEH. LAT-DIR. DATA. ALPHA=6,RUDDER=-10 DEGS.,ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.24 INTEG. VEH. LAT-DIR. DATA. ALPHA=6.RUDDER=-10 DEGS..ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.24 INTEG. VEH. LAT-DIR. DATA, ALPHA=6,RUDDER=-10 DEGS.,ORBINC=0.500 DEG.

CA)MACH = 1.56

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FIG.24 INTEG. VEH. LAT-DIR. DATA, ALPHA=6,RUDDER=-10 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.25 INTEG. VEH. LAT-DIR. DATA. ALPHA=8.RUDDER=-10 DEGS.,ORBINC=0.500 DEG.

(A)MACH = 1.56

SIDESLIP ANGLE, BETA, DEGREES

SIDE FORCE COEFFICIENT, CY

FIG.25 INTEG. VEH. LAT-DIR. DATA, ALPHA=8,RUDDER=-10 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.25 INTEG. VEH. LAT-DIR. DATA. ALPHA=8,RUDDER=-10 DEGS.,ORBINC=0.500 DEG.

CAJMACH = 1.56

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FIG.25 INTEG. VEH. LAT-DIR. DATA, ALPHA=8,RUDDER=-10 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

FIG.25 INTEG. VEH. LAT-DIR. DATA, ALPHA=8,RUDDER=-10 DEGS.,ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.25 INTEG. VEH. LAT-DIR. DATA, ALPHA=8,RUDDER=-10 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.25 INTEG. VEH. LAT-DIR. DATA, ALPHA=8,RUDDER=-10 DEGS.,ORBINC=0.500 DEG.

CAJMACH = 1.56

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FIG.25 INTEG. VEH. LAT-DIR. DATA. ALPHA=8,RUDDER=-10 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.25 INTEG. VEH. LAT-DIR. DATA. ALPHA=8.RUDDER=-10 DEGS..ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.25 INTEG. VEH. LAT-DIR. DATA, ALPHA=8,RUDDER=-10 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.25 INTEG. VEH. LAT-DIR. DATA. ALPHA=8.RUDDER=-10 DEGS..ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.25 INTEG. VEH. LAT-DIR. DATA, ALPHA=8,RUDDER=-10 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.25 INTEG. VEH. LAT-DIR. DATA, ALPHA=8,RUDDER=-10 DEGS.,ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.25 INTEG. VEH. LAT-DIR. DATA. ALPHA=8.RUDDER=-10 DEGS..ORBINC=0.500 DEG.

(B)MACH = 2.00

FIG.25 INTEG. VEH. LAT-DIR. DATA. ALPHA=8.RUDDER=-10 DEGS..ORBINC=0.500 DEG.

(A)MACH = 1.56

FIG.25 INTEG. VEH. LAT-DIR. DATA, ALPHA=8,RUDDER=-10 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

FIG.26 INTEG. VEH. LAT-DIR. DATA. ALPHA=-8,RUDDER=15 DEGS.,ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.26 INTEG. VEH. LAT-DIR. DATA, ALPHA=-8.RUDDER=15 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.26 INTEG. VEH. LAT-DIR. DATA, ALPHA=-8.RUDDER=15 DEGS.,ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.26 INTEG. VEH. LAT-DIR. DATA. ALPHA=-8,RUDDER=15 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.26 INTEG. VEH. LAT-DIR. DATA, ALPHA=-8,RUDDER=15 DEGS.,ORBINC=0.500 DEG.

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(A)MACH = 1.56

FIG.26 INTEG. VEH. LAT-DIR. DATA. ALPHA=-8.RUDDER=15 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.26 INTEG. VEH. LAT-DIR. DATA, ALPHA=-8,RUDDER=15 DEGS.,ORBINC=0.500 DEG.

(A)MACH = 1.56

FIG.26 INTEG. VEH. LAT-DIR. DATA. ALPHA=-8.RUDDER=15 DEGS..ORBINC=0.500 DEG.

CBJMACH = 2.00

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FIG.26 INTEG. VEH. LAT-DIR. DATA. ALPHA=-8.RUDDER=15 DEGS..ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.26 INTEG. VEH. LAT-DIR. DATA. ALPHA=-8.RUDDER=15 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.26 INTEG. VEH. LAT-DIR. DATA, ALPHA=-8,RUDDER=15 DEGS.,ORBINC=0.500 DEG.

CA)MACH = 1.56

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FIG.26 INTEG. VEH. LAT-DIR. DATA, ALPHA=-8.RUDDER=15 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.26 INTEG. VEH. LAT-DIR. DATA. ALPHA=-8.RUDDER=15 DEGS.,ORBINC=0.500 DEG.

SIDESLIP ANGLE. BETA. DEGREES

PITCHING MOMENT COEFFICIENT. CLM

(A)MACH = 1.56

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FIG.26 INTEG. VEH. LAT-DIR. DATA. ALPHA=-8.RUDDER=15 DEGS..ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.26 INTEG. VEH. LAT-DIR. DATA, ALPHA=-8,RUDDER=15 DEGS.,ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.26 INTEG. VEH. LAT-DIR. DATA. ALPHA=-8,RUDDER=15 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.27 INTEG. VEH. LAT-DIR. DATA, ALPHA=-4,RUDDER=15 DEGS.,ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.27 INTEG. VEH. LAT-DIR. DATA, ALPHA=-4,RUDDER=15 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.27 INTEG. VEH. LAT-DIR. DATA, ALPHA=-4,RUDDER=15 DEGS.,ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.27 INTEG. VEH. LAT-DIR. DATA. ALPHA=-4.RUDDER=15 DEGS..ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.27 INTEG. VEH. LAT-DIR. DATA, ALPHA=-4,RUDDER=15 DEGS.,ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.27 INTEG. VEH. LAT-DIR. DATA, ALPHA=-4,RUDDER=15 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.27 INTEG. VEH. LAT-DIR. DATA. ALPHA=-4.RUDDER=15 DEGS..ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.27 INTEG. VEH. LAT-DIR. DATA. ALPHA=-4,RUDDER=15 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.27 INTEG. VEH. LAT-DIR. DATA, ALPHA=-4,RUDDER=15 DEGS.,ORBINC=0.50C DEG.

(A)MACH = 1.56

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FIG.27 INTEG. VEH. LAT-DIR. DATA, ALPHA=-4,RUDDER=15 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.27 INTEG. VEH. LAT-DIR. DATA. ALPHA=-4.RUDDER=15 DEGS..ORBINC=0.500 DEG.

(A)MACH = 1.56

FIG.27 INTEG. VEH. LAT-DIR. DATA, ALPHA=-4,RUDDER=15 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.27 INTEG. VEH. LAT-DIR. DATA, ALPHA=-4,RUDDER=15 DEGS.,ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.27 INTEG. VEH. LAT-DIR. DATA. ALPHA=-4,RUDDER=15 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.27 INTEG. VEH. LAT-DIR. DATA, ALPHA=-4,RUDDER=15 DEGS.,ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.27 INTEG. VEH. LAT-DIR. DATA, ALPHA=-4,RUDDER=15 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.28 INTEG. VEH. LAT-DIR. DATA, ALPHA=0,RUDDER=15 DEGS.,ORBINC=0.500 DEG.

(A)MACH = 1.56   PAGE   379

FIG.28 INTEG. VEH. LAT-DIR. DATA, ALPHA=0,RUDDER=15 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.28 INTEG. VEH. LAT-DIR. DATA, ALPHA=0,RUDDER=15 DEGS.,ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.28 INTEG. VEH. LAT-DIR. DATA. ALPHA=0.RUDDER=15 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.28 INTEG. VEH. LAT-DIR. DATA. ALPHA=0.RUDDER=15 DEGS..ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.28 INTEG. VEH. LAT-DIR. DATA, ALPHA=0,RUDDER=15 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.28 INTEG. VEH. LAT-DIR. DATA. ALPHA=0.RUDDER=15 DEGS.,ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.28 INTEG. VEH. LAT-DIR. DATA. ALPHA=0.RUDDER=15 DEGS..ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.28 INTEG. VEH. LAT-DIR. DATA, ALPHA=0,RUDDER=15 DEGS.,ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.28 INTEG. VEH. LAT-DIR. DATA, ALPHA=0,RUDDER=15 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.28 INTEG. VEH. LAT-DIR. DATA, ALPHA=0.RUDDER=15 DEGS.,ORBINC=0.500 DEG.

SIDESLIP ANGLE, BETA, DEGREES

NORMAL FORCE COEFFICIENT, CN

CAJMACH = 1.56

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FIG.28 INTEG. VEH. LAT-DIR. DATA. ALPHA=0,RUDDER=15 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.28 INTEG. VEH. LAT-DIR. DATA, ALPHA=0,RUDDER=15 DEGS.,ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.28 INTEG. VEH. LAT-DIR. DATA. ALPHA=0.RUDDER=15 DEGS.,ORBINC=0.500 DEG.
(B)MACH = 2.00

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FIG.28 INTEG. VEH. LAT-DIR. DATA. ALPHA=0,RUDDER=15 DEGS.,ORBINC=0.500 DEG.

(A)MACH = 1.56

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YAWING MOMENT COEFFICIENT, CYN (BODY AXIS)

SIDE FORCE COEFFICIENT, CY

FIG.28 INTEG. VEH. LAT-DIR. DATA. ALPHA=0.RUDDER=15 DEGS.,ORBINC=0.500 DEG.
(B)MACH = 2.00

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FIG.29 INTEG. VEH. LAT-DIR. DATA, ALPHA=4,RUDDER=15 DEGS.,ORBINC=0.500 DEG.

(A)MAC = .56

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SIDESLIP ANGLE, BETA, DEGREES

SIDE FORCE COEFFICIENT, CY

FIG.29 INTEG. VEH. LAT-DIR. DATA. ALPHA=4.RUDDER=15 DEGS..ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.29 INTEG. VEH. LAT-DIR. DATA. ALPHA=4,RUDDER=15 DEGS.,ORBINC=0.500 DEG.

(A)MACH = .56

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FIG.29 INTEG. VEH. LAT-DIR. DATA, ALPHA=4,RUDDER=15 DEGS.,ORBINC=0.500 DEG.

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FIG.29 INTEG. VEH. LAT-DIR. DATA. ALPHA=4,RUDDER=15 DEGS.,ORBINC=0.500 DEG.

(A)MACH = .56

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FIG.29 INTEG. VEH. LAT-DIR. DATA. ALPHA=4,RUDDER=15 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.29 INTEG. VEH. LAT-DIR. DATA, ALPHA=4,RUDDER=15 DEGS.,ORBINC=0.500 DEG.

SIDESLIP ANGLE, BETA, DEGREES

AXIAL FORCE COEFFICIENT, CA

FIG.29 INTEG. VEH. LAT-DIR. DATA. ALPHA=4,RUDDER=15 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.29 INTEG. VEH. LAT-DIR. DATA. ALPHA=4,RUDDER=15 DEGS.,ORBINC=0.500 DEG.

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CADYAC- = .56

FIG.29 INTEG. VEH. LAT-DIR. DATA. ALPHA=4,RUDDER=15 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.29 INTEG. VEH. LAT-DIR. DATA. ALPHA=4.RUDDER=15 DEGS..ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.29 INTEG. VEH. LAT-DIR. DATA. ALPHA=4,RUDDER=15 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.29 INTEG. VEH. LAT-DIR. DATA. ALPHA=4,RUDDER=15 DEGS.,ORBINC=0.500 DEG.

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(A)MACH = 1.56

FIG.29 INTEG. VEH. LAT-DIR. DATA. ALPHA=4,RUDDER=15 DEGS.,ORBINC=0.500 DEG.

(3)MACH = 2.00

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FIG.29 INTEG. VEH. LAT-DIR. DATA. ALPHA=4.RUDDER=15 DEGS..ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.29 INTEG. VEH. LAT-DIR. DATA. ALPHA=4.RUDDER=15 DEGS..ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.30 INTEG. VEH. LAT-DIR. DATA, ALPHA=6,RUDDER=15 DEGS.,ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.30 INTEG. VEH. LAT-DIR. DATA, ALPHA=6,RUDDER=15 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.30 INTEG. VEH. LAT-DIR. DATA. ALPHA=6.RUDDER=15 DEGS..ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.30 INTEG. VEH. LAT-DIR. DATA. ALPHA=6.RUDDER=15 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.30 INTEG. VEH. LAT-DIR. DATA. ALPHA=6.RUDDER=15 DEGS..ORBINC=0.500 DEG.

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(A)MACH = 1.56

FIG.30 INTEG. VEH. LAT-DIR. DATA. ALPHA=6,RUDDER=15 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.30 INTEG. VEH. LAT-DIR. DATA, ALPHA=6,RUDDER=15 DEGS.,ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.30 INTEG. VEH. LAT-DIR. DATA. ALPHA=6.RUDDER=15 DEGS..ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.30 INTEG. VEH. LAT-DIR. DATA. ALPHA=6.RUDDER=15 DEGS..ORBINC=0.500 DEG.

(A)MACH = .56

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FIG.30 INTEG. VEH. LAT-DIR. DATA. ALPHA=6.RUDDER=15 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.30 INTEG. VEH. LAT-DIR. DATA, ALPHA=6,RUDDER=15 DEGS.,ORBINC=0.500 DEG.

SIDESLIP ANGLE, BETA, DEGREES

NORMAL FORCE COEFFICIENT, CN

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(A)MACH = 1.56

FIG.30 INTEG. VEH. LAT-DIR. DATA. ALPHA=6.RUDDER=15 DEGS..ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.30 INTEG. VEH. LAT-DIR. DATA. ALPHA=6,RUDDER=15 DEGS.,ORBINC=0.500 DEG.

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(A)MACH = 1.56

FIG.30 INTEG. VEH. LAT-DIR. DATA. ALPHA=6,RUDDER=15 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.30 INTEG. VEH. LAT-DIR. DATA. ALPHA=6.,RUDDER=15 DEGS.,ORBINC=0.500 DEG.

(A)MACH = .56

FIG.30 INTEG. VEH. LAT-DIR. DATA. ALPHA=6.RUDDER=15 DEGS..ORBINC=0.500 DEG.

YAWING MOMENT COEFFICIENT. CYN (BODY AXIS)

SIDE FORCE COEFFICIENT, CY

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FIG.31 INTEG. VEH. LAT-DIR. DATA. ALPHA=8.RUDDER=15 DEGS..ORBINC=0.500 DEG.

FIG.31 INTEG. VEH. LAT-DIR. DATA, ALPHA=8.RUDDER=15 DEGS.,ORBINC=0.500 DEG.

FIG.31 INTEG. VEH. LAT-DIR. DATA, ALPHA=8,RUDDER=15 DEGS.,ORBINC=0.500 DEG.

(A)MACH = .56

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FIG.31 INTEG. VEH. LAT-DIR. DATA, ALPHA=8,RUDDER=15 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.31 INTEG. VEH. LAT-DIR. DATA, ALPHA=8,RUDDER=15 DEGS.,ORBINC=0.500 DEG.

(A)MACH = .56

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FIG.31 INTEG. VEH. LAT-DIR. DATA. ALPHA=8.RUDDER=15 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.31 INTEG. VEH. LAT-DIR. DATA, ALPHA=8,RUDDER=15 DEGS.,ORBINC=0.500 DEG.

CA)MACH = 1.56

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FIG.31 INTEG. VEH. LAT-DIR. DATA, ALPHA=8,RUDDER=15 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.31 INTEG. VEH. LAT-DIR. DATA, ALPHA=8,RUDDER=15 DEGS.,ORBINC=0.500 DEG.

(A)MACH = 1.56

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FIG.31 INTEG. VEH. LAT-DIR. DATA. ALPHA=8.RUDDER=15 DEGS..ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.31 INTEG. VEH. LAT-DIR. DATA. ALPHA=8.RUDDER=15 DEGS.,ORBINC=0.500 DEG.

(A)MACH = .56

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FIG.31 INTEG. VEH. LAT-DIR. DATA, ALPHA=8,RUDDER=15 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.31 INTEG. VEH. LAT-DIR. DATA. ALPHA=8.RUDDER=15 DEGS..ORBINC=0.500 DEG.

(A)MACH = .56

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FIG.31 INTEG. VEH. LAT-DIR. DATA. ALPHA=8.RUDDER=15 DEGS.,ORBINC=0.500 DEG.

(B)MACH = 2.00

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FIG.31 INTEG. VEH. LAT-DIR. DATA, ALPHA=8,RUDDER=15 DEGS.,ORBINC=0.500 DEG.

YAWING MOMENT COEFFICIENT, CYN (BODY AXIS)

SIDE FORCE COEFFICIENT, CY

FIG.31 INTEG. VEH. LAT-DIR. DATA, ALPHA=8, RUDDER=15 DEGS., ORBINC=0.500 DEG.

YAWING MOMENT COEFFICIENT, CYN (BODY AXIS)

(B)MACH = 2.00

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FIG.32 INTEGRATED LAUNCH VEHICLE LONGITUDINAL AERODYNAMIC DATA, MN=2.5,3.0,3.5

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(A)MACH = 2.50

FIG.32 INTEGRATED LAUNCH VEHICLE LONGITUDINAL AERODYNAMIC DATA.MN=2.5.3.0.3.5

(B)MACH = 3.00

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FIG.32 INTEGRATED LAUNCH VEHICLE LONGITUDINAL AERODYNAMIC DATA.MN=2.5,3.0,3.5

(C)MACH = 3.50

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FIG.32 INTEGRATED LAUNCH VEHICLE LONGITUDINAL AERODYNAMIC DATA.MN=2.5.3.0.3.5

(A)MACH = 2.50

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FIG.32 INTEGRATED LAUNCH VEHICLE LONGITUDINAL AERODYNAMIC DATA,MN=2.5.3.C.3.5

(B)MACH = 3.00

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FIG.32 INTEGRATED LAUNCH VEHICLE LONGITUDINAL AERODYNAMIC DATA,MN=2.5.3.0.3.5

(C)MACH = 3.50

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FIG.32 INTEGRATED LAUNCH VEHICLE LONGITUDINAL AERODYNAMIC DATA.MN=2.5.3.0.3.5

(A)MACH = 2.50

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FIG.32 INTEGRATED LAUNCH VEHICLE LONGITUDINAL AERODYNAMIC DATA.MN=2.5.3.0.3.5

(B)MACH = 3.00

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FIG.32 INTEGRATED LAUNCH VEHICLE LONGITUDINAL AERODYNAMIC DATA.MN=2.5,3.0,3.5

(C)MACH = 3.50

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FIG.32 INTEGRATED LAUNCH VEHICLE LONGITUDINAL AERODYNAMIC DATA.MN=2.5.3.0.3.5

(A)MACH = 2.50

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FIG.32 INTEGRATED LAUNCH VEHICLE LONGITUDINAL AERODYNAMIC DATA.MN=2.5.3.0.3.5

FIG.32 INTEGRATED LAUNCH VEHICLE LONGITUDINAL AERODYNAMIC DATA.MN=2.5,3.0,3.5

(C)MACH = 3.50

FIG.33 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=-8 DEGS..MN=2.5.3.0.3.5

CA)MACH = 2.50

FIG.33 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=-8 DEGS..MN=2.5,3.0,3.5

(B)MACH = 3.00

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FIG.33 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA,ALPHA=-8 DEGS.,MN=2.5,3.0,3.5

(C)MACH = 3.50

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FIG.33 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA,ALPHA=-8 DEGS.,MN=2.5,3.0,3.5

(A)MACH = 2.50

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FIG.33 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA,ALPHA=-8 DEGS.,MN=2.5.3.0.3.5

(C)MACH = 3.50

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FIG.33 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA,ALPHA=-8 DEGS.,MN=2.5,3.0,3.5

(A)MACH = 2.50

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FIG.33 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA,ALPHA=-8 DEGS.,MN=2.5,3.0,3.5

(B)MACH = 3.00

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FIG.33 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA,ALPHA=-8 DEGS.,MN=2.5.3.0.3.5

(C)MACH = 3.50

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FIG.33 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=-8 DEGS..MN=2.5.3.0.3.5

(A)MACH = 2.50

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FIG.33 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=-8 DEGS..MN=2.5.3.0.3.5

(B)MACH = 3.00

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FIG.33 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA,ALPHA=-8 DEGS.,MN=2.5,3.0,3.5

(C)MACH = 3.50

FIG.33 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=-8 DEGS.,M=2.5,3.0,3.5

(A)MACH = 2.50

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FIG.33 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=-8 DEGS..MN=2.5,3.0,3.5

(B)MACH = 3.00

FIG.33 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA,ALPHA=-8 DEGS.,MA=2.5,3.0,3.5

(C)MACH = 3.50

FIG.33 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPₒₐ=-8 DEGS.,MN=2.5,3.0,3.5

(A)MACH = 2.50

FIG.33 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA. ALPHA=-8 DEGS., MN=2.5,3.0,3.5

(B) MACH = 3.00

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FIG.33 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=-8 DEGS.,MN=2.5,3.0,3.5

(C)MACH = 3.50

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FIG.33 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA,ALPHA=-8 DEGS.,MN=2.5.3.0.3.5

(A)MACH = 2.50

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FIG.33 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=-8 DEGS.,MN=2.5,3.0,3.5

(B)MACH = 3.00

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FIG.33 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA,ALPHA=-8 DEGS.,MN=2.5,3.0,3.5

(C)MACH = 3.50

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FIG.33 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=-8 DEGS..MN=2.5.3.0.3.5

(A)MACH = 2.50

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FIG.33 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=-8 DEGS.,MN=2.5,3.0,3.5

(B)MACH = 3.00

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FIG.33 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=-8 DEGS..MN=2.5.3.0.3.5

(C)MACH = 3.50

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FIG.34 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=-6 DEGS..MN=2.5.3.0.3.5

(A)MACH = 2.50

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FIG.34 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA,ALPHA=-6 DEGS.,MN=2.5.3.0.3.5

(B)MACH = 3.00

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FIG.34 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=-6 DEGS..MN=2.5.3.0.3.5

(C)MACH = 3.50

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FIG.34 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=-6 DEGS..MA=2.5.3.0.3.5

(A)MACH = 2.50

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FIG.34 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=-6 DEGS..MN=2.5.3.0.3.5

(B)MACH = 3.00

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FIG.34 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA, ALPHA=-6 DEGS., MN=2.5.3.0.3.5

(C)MACH = 3.50

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FIG.34 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=-6 DEGS.,MN=2.5,3.0,3.5

(A)MACH = 2.50

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FIG.34 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA, ALPHA=-6 DEGS., MN=2.5,3.0,3.5

(B)MACH = 3.00

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FIG.34 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=-6 DEGS.,MN=2.5,3.0,3.5

(C)MACH = 3.50

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FIG.34 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=-6 DEGS.,MN=2.5,3.0,3.5

(A)MACH = 2.50

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FIG.34 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=-6 DEGS.,MN=2.5.3.0.3.5

(B)MACH = 3.00

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FIG.34 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=-6 DEGS..MN=2.5.3.0.3.5

(C)MACH = 3.50

FIG.34 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA, ALPHA=-6 DEGS.,MN=2.5,3.0,3.5

(A)MACH = 2.50

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FIG.34 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=-6 DEGS.,MN=2.5,3.0,3.5

(B)MACH = 3.00

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FIG.34 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA,ALPHA=-6 DEGS.,MN=2.5,3.0,3.5

(C)MACH = 3.50

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FIG.34 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=-6 DEGS.,MN=2.5.3.0.3.5

(A)MACH = 2.50

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FIG.34 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=-6 DEGS.,MN=2.5.3.0.3.5

(B)MACH = 3.00

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FIG.34 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=-6 DEGS.,MN=2.5,3.0,3.5

(C)MACH = 3.50

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FIG.34 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA,ALPHA=-6 DEGS.,MA=2.5,3.0,3.5

(A)MACH = 2.50

FIG.34 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=-6 DEGS..MN=2.5,3.0,3.5

SIDE FORCE COEFFICIENT. CY

YAWING MOMENT COEFFICIENT, CYN   (BODY AXIS)

(B)MACH = 3.00

FIG.34 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=-6 DEGS..MN=2.5.3.0.3.5

(C)MACH = 3.50

FIG.35 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=-4 DEGS..MN=2.5.3.0.3.5

(A)MACH = 2.50

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FIG.35 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA,ALPHA=-4 DEGS.,MN=2.5,3.0,3.5

(B)MACH = 3.00

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FIG.35 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=-4 DEGS.,MN=2.5.3.0.3.5

(C)MACH = 3.50

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FIG.35 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA,ALPHA=-4 DEGS.,MN=2.5,3.0,3.5

(A)MACH = 2.50

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FIG.35 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA, ALPHA=-4 DEGS., MN=2.5,3.0,3.5

(B)MACH = 3.00

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FIG.35 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=-4 DEGS.,MN=2.5.3.0.3.5

SIDESLIP ANGLE, BETA, DEGREES

YAWING MOMENT COEFFICIENT, CYN   (BODY AXIS)

(C)MACH = 3.50

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FIG.35 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA)=-4 DEGS.,MN=2.5.3.0.3.5

(A)MACH = 2.50

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FIG.35 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA,ALPHA=-4 DEGS.,MN=2.5,3.0,3.5

(B)MACH = 3.00

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FIG.35 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA,ALPHA=-4 DEGS.,MN=2.5,3.0,3.5

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FIG.35 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA,ALPHA=-4 DEGS.,MN=2.5,3.0,3.5

(A)MACH = 2.50

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FIG.35 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=-4 DEGS.,MN=2.5.3.0.3.5

(BJMACH = 3.00

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FIG.35 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA,ALPHA=-4 DEGS.,MN=2.5,3.0,3.5

(C)MACH = 3.50

PAGE 5CB

FIG.35 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=-4 DEGS..MN=2.5.3.0.3.5

(A)MACH = 2.50

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FIG.35 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA,ALPHA=-4 DEGS.,MN=2.5,3.0,3.5

(B)MACH = 3.00

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FIG.35 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=-4 DEGS..MN=2.5.3.0.3.5

(C)MACH = 3.50

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FIG.35 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=-4 DEGS.,MN=2.5,3.0,3.5

CA)MACH = 2.50

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FIG.35 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA,ALPHA=-4 DEGS.,MN=2.5,3.0,3.5

(B)MACH = 3.00

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FIG.35 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA,ALPHA=-4 DEGS.,MN=2.5,3.0,3.5

(C)MACH = 3.50

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FIG.35 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA,ALPHA=-4 DEGS.,MN=2.5.3.0.3.5

(A)MACH = 2.50

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FIG.35 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=-4 DEGS..MN=2.5.3.0.3.5

(B)MACH = 3.00

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FIG.35 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA..ALPHA=-4 DEGS..MN=2.5.3.0.3.5

(C)MACH = 3.50

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FIG.36 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA,ALPHA=-2 DEGS.,MN=2.5.3.0.3.5

(A)MACH = 2.50

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FIG.36 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=-2 DEGS..MN=2.5.3.0.3.5

(B)MACH = 3.00

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FIG.36 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=-2 DEGS..MN=2.5,3.0.3.5

(C)MACH = 3.50

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FIG.36 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA. ALPHA=-2 DEGS. MN=2.5.3.0.3.5

(A)MACH = 2.50

FIG.36 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA, ALPHA=-2 DEGS., M=2.5, 3.0, 3.5

(B)MACH = 3.00

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FIG.36 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA, ALPHA=-2 DEGS., MN=2.5,3.0,3.5

(C)MACH = 3.50

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FIG.36 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.,ALPHA=-2 DEGS.,MN=2.5.3.0.3.5

(A)MACH = 2.50

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FIG.36 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA, ALPHA=-2 DEGS., MN=2.5,3.0,3.5

(B)MACH = 3.00

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FIG.36 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=-2 DEGS.,MN=2.5.3.0.3.5

(C)MACH = 3.50

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FIG.36 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=-2 DEGS.,MN=2.5.3.0.3.5

(A)MACH = 2.50

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FIG.36 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA,ALPHA=-2 DEGS.,MN=2.5,3.0,3.5

(B)MACH = 3.00

FIG.36 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA,ALPHA=-2 DEGS.,MN=2.5.3.0.3.5

(C)MACH = 3.50

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FIG.36 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=-2 DEGS.,MN=2.5.3.0.3.5

(A)MACH = 2.50

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FIG.36 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=-2 DEGS.,MN=2.5.3.0.3.5

(B)MACH = 3.00

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FIG.36 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA, ALPHA=-2 DEGS., MN=2.5,3.0,3.5

(C) MACH = 3.50

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FIG.36 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA,ALPHA=-2 DEGS.,MN=2.5.3.0.3.5

(A)MACH = 2.50

FIG.36 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=-2 DEGS.,MN=2.5,3.0,3.5

(B)MACH = 3.00

FIG.36 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=-2 DEGS..MN=2.5.3.0.3.5

(C)MACH = 3.50

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FIG.36 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA,ALPHA=-2 DEGS.,MN=2.5,3.0,3.5

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( )MACH = 2.50

FIG.36 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=-2 DEGS..MN=2.5.3.0.3.5

(B)MACH = 3.00

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FIG.36 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=-2 DEGS..MN=2.5.3.0.3.5

(C)MACH = 3.50

FIG.37 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA,ALPHA=0 DEGS.,MN=2.5,3.0,3.5

(A)MACH = 2.50

FIG.37 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA,ALPHA=0 DEGS.,MN=2.5.3.0.3.5

(B)MACH = 3.00

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FIG.37 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=0 DEGS.,MN=2.5.3.0.3.5

SIDESLIP ANGLE, BETA, DEGREES

(C)MACH = 3.50

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FIG.37 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA,ALPHA=0 DEGS.,MN=2.5.3.0.3.5

(A)MACH = 2.50

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FIG.37 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=0 DEGS.,MN=2.5.3.0.3.5

(B)MACH = 3.00

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FIG.37 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=0 DEGS.,MN=2.5.3.0.3.5

(C)MACH = 3.50

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FIG.37 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=0 DEGS.,MN=2.5.3.0.3.5

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(A)MACH = 2.50

FIG.37 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA,ALPHA=0 DEGS.,MN=2.5,3.0,3.5

(B)MACH = 3.00

FIG.37 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=0 DEGS..MN=2.5.3.0.3.5

(C)MACH = 3.50

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FIG.37 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=0 DEGS..MN=2.5.3.0.3.5

(A)MACH = 2.50

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FIG.37 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=0 DEGS..XN=2.5.3.0.3.5

(B)MACH = 3.00

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FIG.37 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA,ALPHA=0 DEGS.,M=2.5,3.0,3.5

(C)MACH = 3.50

FIG.37 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=0 DEGS..MN=2.5,3.0,3.5

SIDESLIP ANGLE. BETA. DEGREES

NORMAL FORCE COEFFICIENT. CN

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FIG.37 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=0 DEGS.,MN=2.5,3.0,3.5

(B)MACH = 3.00

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FIG.37 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=0 DEGS.,MN=2.5,3.0,3.5

(C)MACH = 3.50

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FIG.37 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA,ALPHA=0 DEGS.,MN=2.5,3.0,3.5

(A)MACH = 2.50

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FIG.37 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA,ALPHA=0 DEGS.,MN=2.5,3.0,2.5

(B)MACH = 3.00

FIG.37 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=0 DEGS..MN=2.5.3.0.3.5

(C)MACH = 3.50

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FIG.37 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=0 DEGS.,MN=2.5.3.0.3.5

(A)MACH = 2.50

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FIG.37 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=0 DEGS..MN=2.5.3.0.3.5

(B)MACH = 3.00

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FIG.37 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=0 DEGS..MN=2.5.3.0.3.5

(C)MACH = 3.50

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FIG.38 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=2 DEGS..MN=2.5.3.0.3.5

(A)MACH = 2.50

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FIG.38 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA, ALPHA=2 DEGS., MN=2.5,3.0,3.5

(B)MACH = 3.00

FIG.38 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=2 DEGS.,M=2.5,3.0,3.5

(C)MACH = 3.50

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FIG.38 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=2 DEGS..MN=2.5.B.0.3.5

(A)MACH = 2.50

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FIG.38 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=2 DEGS..MN=2.5.3.0.3.5

(B)MACH = 3.00

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FIG.38 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=2 DEGS.,MN=2.5.3.0.3.5

(C)MACH = 3.50

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FIG.38 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=2 DEGS..MN=2.5,3.0,3.5

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(A)MACH = 2.50

FIG.38 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA,ALPHA=2 DEGS.,MN=2.5,3.0,3.5

(B)MACH = 3.00

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FIG.38 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=2 DEGS..MN=2.5.3.0.3.5

(C)MACH = 3.50

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FIG.38 INTEGRATED LAUNCH VEHICLE VEHICLE LAT-DIR. DATA.ALPHA=2 DEGS.,MN=2.5.3.0,3.5

SIDESLIP ANGLE, BETA, DEGREES

FOREBODY AXIAL FORCE COEFFICIENT, CAF

(A)MACH = 2.50

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FIG.38 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA, ALPHA=2 DEGS., MN=2.5.3.0.3.5

(B)MACH = 3.00

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FIG.38 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA,ALPHA=2 DEGS.,MN=2.5,3.0,3.5

(C)MACH = 3.50

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FIG.38 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=2 DEGS..MN=2.5.3.0.3.5

(A)MACH = 2.50

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FIG.38 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=2 DEGS..MN=2.5.3.0.3.5

(B)MACH = 3.00

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FIG.38 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.,ALPHA=2 DEGS.,MN=2.5,3.0,3.5

(C)MACH = 3.50

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FIG.38 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA, ALPHA=2 DEGS., MN=2.5.3.0.3.5

(A)MACH = 2.50

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FIG.38 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=2 DEGS..MN=2.5.3.0.3.5

(B)MACH = 3.00

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FIG.38 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA,ALPHA=2 DEGS.,M=2.5.3.0.3.5

(C)MACH = 3.50

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FIG.38 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=2 DEGS.,M=2.5,3.0,3.5

CAJMACH = 2.50

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FIG.38 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=2 DEGS..MN=2.5.3.0.3.5

(B)MACH = 3.00

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FIG.38 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=2 DEGS.,MN=2.5.3.0.3.5

(C)MACH = 3.50

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FIG.39 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=4 DEGS.,MN=2.5,3.0,3.5

(A)MACH = 2.50

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FIG.39 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=4 DEGS..MN=2.5.3.0.3.5

(B)MACH = 3.00

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FIG.39 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=4 DEGS.,MN=2.5,3.0,3.5

(C)MACH = 3.50

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FIG.39 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA,ALPHA=4 DEGS.,MN=2.5,3.0,3.5

(A)MACH = 2.50

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FIG.39 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA,ALPHA=4 DEGS.,MN=2.5,3.0,3.5

(B)MACH = 3.00

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FIG.39 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA,ALPHA=4 DEGS.,MN=2.5,3.0,3.5

(C)MACH = 3.50

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FIG.39 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=4 DEGS..MN=2.5.3.0.3.5

(A)MACH = 2.50

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FIG.39 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.,ALPHA=4 DEGS.,MN=2.5,3.0,3.5

(B)MACH = 3.00

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FIG.39 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=4 DEGS..MN=2.5,3.0,3.5

(C)MACH = 3.50

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FIG.39 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=4 DEGS.,MN=2.5.3.0.3.5

(A)MACH = 2.50

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FIG.39 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=4 DEGS..MN=2.5.3.0.3 5

SIDESLIP ANGLE. BETA. DEGREES

FOREBODY AXIAL FORCE COEFFICIENT. CAF

(B)MACH = 3.00

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FIG.39 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=4 DEGS..MN=2.5.3.0.3.5

(C)MACH = 3.50

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FIG.39 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA, ALPHA=4 DEGS., MN=2.5,3.0,3 5

CA)MACH = 2.50

FIG.39 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA,ALPHA=4 DEGS.,MN=2.5,3.0,3.5

(B)MACH = 3.00

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FIG.39 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA,ALPHA=4 DEGS.,MN=2.5,3.0,3.5

(C)MACH = 3.50

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FIG.39 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=4 DEGS.,MN=2.5,3.0,3.5

(A)MACH = 2.50

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FIG.39 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=4 DEGS.,MN=2.5.3.0.3.5

(B)MACH = 3.00

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FIG.39 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA,ALPHA=4 DEGS.,MN=2.5,3.0,3.5

(C)MACH = 3.50

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FIG.39 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA,ALPHA=4 DEGS.,MN=2.5.3.0,3.5

CA)MACH = 2.50

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FIG.39 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=4 DEGS.,MN=2.5.3.0.3.5

(B)MACH = 3.00

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FIG.39 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA,ALPHA=4 DEGS.,MN=2.5,3.0,3.5

(C)MACH = 3.50

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FIG.40 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA,ALPHA=6 DEGS.,MN=2.5,3.0,3.5

(A)MACH = 2.50

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FIG.40 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=6 DEGS..MN=2.5,3.0,3.5

(B)MACH = 3.00

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FIG.40 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA. ALPHA=6 DEGS., MN=2.5,3.0,3.5

(C)MACH = 3.50

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FIG.40 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA,ALPHA=6 DEGS.,MN=2.5.3.0.3.5

(A)MACH = 2.50

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FIG.40 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA,ALPHA=6 DEGS.,MN=2.5,3.0,3.5

(B)MACH = 3.00

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FIG.40 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=6 DEGS..MN=2.5,3.0,3.5

(C)MACH = 3.50

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FIG.40 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA,ALPHA=6 DEGS.,MN=2.5.3.0.3.5

(A)MACH = 2.50

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FIG.40 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=6 DEGS..MN=2.5.3.0.3.5

(B)MACH = 3.00

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FIG.40 INTEGRATED LAUNCH VEHICLE LAT-DIR, DATA,ALPHA=6 DEGS.,MN=2.5.3.0.3.5

(C)MACH = 3.50

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FIG.40 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA. AL A=6 DEGS..MN=2.5.3.0.3.5

(A)MACH = 2.50

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FIG.40 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=6 DEGS..MN=2.5,3.0,3.5

(BJMACH = 3.00

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FIG.40 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA,ALPHA=6 DEGS.,MN=2.5,3.0,3.5

(C)MACH = 3.50

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FIG.40 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA,ALPHA=6 DEGS.,MN=2.5,3.0,3.5

(A)MACH = 2.50

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FIG.40 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.AL' :=6 DEGS..MN=2.5.3.0.3.5

(B)MACH = 3.00

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FIG.40 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA.ALPHA=6 DEGS..MN=2.5.3.0.3.5

(C)MACH = 3.50

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FIG.40 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA,ALP.=6 DEGS..MN=2.5,3.0,3.5

(A)MACH = 2.50

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FIG.40 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA, ALPHA=6 DEGS., MN=2.5, 3.0, 3.5

(B) MACH = 3.00

FIG.40 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA,ALP. =6 DEGS.,MV=2.5.3.0.3.5

(C)MACH = 3.50

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FIG.40 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA,ALPHA=6 DEGS.,M=2.5,3.0,3.5

(A)MACH = 2.50

FIG.40 INTEGRATED LAUNCH VEHICLE LAT-DIR DATA.AL 6 DEGS.,MN=2.5,3.0,3.5

(B)MACH = 3.00

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FIG.40 INTEGRATED LAUNCH VEHICLE LAT-DIR. DATA,ALPHA=6 DEGS.,MN=2.5,3.0,3.5

(C)MACH = 3.50

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FIG.41 INTEGRATED LAUNCH VEHICLE LAT-DIR.DATA.ALPHA=8 DEGS..MN=2.5.3.0.3.5

(A)MACH = 2.50

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FIG.41 INTEGRATED LAUNCH VEHICLE LAT-DIR.DATA.ALPHA=8 DEGS.,MN=2.5,3.0,3.5

(B)MACH = 3.00

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FIG.41 INTEGRATED LAUNCH VEHICLE LAT-DIR.DATA,ALPHA=8 DEGS.,MN=2.5,3.0,3.5

(C)MACH = 3.50

FIG.41 INTEGRATED LAUNCH VEHICLE LAT-DIR.DATA,ALPHA=8 DEGS.,MN=2.5,3.0,3.5

CAJMACH = 2.50

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FIG.41 INTEGRATED LAUNCH VEHICLE LAT-DIR.DATA.ALPHA=8 DEGS..MN=2.5.3.0.3.5

(B)MACH = 3.00

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FIG.41 INTEGRATED LAUNCH VEHICLE LAT-DIR.DATA.ALPHA=8 DEGS.,MN=2.5.3.0.3.5

(C)MACH = 3.50

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FIG.41 INTEGRATED LAUNCH VEHICLE LAT-DIR.DATA,ALP = 8 DEGS.,MN=2.5,3.0,3.5

(A)MACH = 2.50

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FIG.41 INTEGRATED LAUNCH VEHICLE LAT-DIR.DATA,ALPHA=8 DEGS.,MN=2.5.3.0.3.5

(B)MACH = 3.00

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FIG.41 INTEGRATED LAUNCH VEHICLE LAT-DIR.DATA.ALPHA 8 DEGS..MN=2.5,3.0,3.5

(C)MACH = 3.50

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FIG.41 INTEGRATED LAUNCH VEHICLE LAT-DIR.DATA.ALPHA=8 DEGS..MN=2.5,3.0,3.5

(A)MACH = 2.50

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FIG.41 INTEGRATED LAUNCH VEHICLE LAT-DIR.DATA.ALPHA=8 DEGS.,MN=2.5,3.0,3.5

(B)MACH = 3.00

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FIG.41 INTEGRATED LAUNCH VEHICLE LAT-DIR.DATA.,ALPHA=8 DEGS.,MN=2.5,3.0,3.5

(C)MACH = 3.50

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FIG.41 INTEGRATED LAUNCH VEHICLE LAT-DIR.DATA,ALPHA-8 DEGS.,MN=2.5.3.0.3.5

(A)MACH = 2.50

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FIG.41 INTEGRATED LAUNCH VEHICLE LAT-DIR.DATA.ALPHA=8 DEGS.,MN=2.5,3.0,3.5

(B)MACH = 3.00

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FIG.41 INTEGRATED LAUNCH VEHICLE LAT-DIR.DATA,ALPHA 8 DEGS.,MN=2.5,3.0,3.5

(C)MACH = 3.50

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FIG.41 INTEGRATED LAUNCH VEHICLE LAT-DIR.DATA,ALPHA=8 DEGS.,MN=2.5,3.0,3.5

(A)MACH = 2.50

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FIG.41 INTEGRATED LAUNCH VEHICLE LAT-DIR.C'TA.ALPHA: 3 DEGS.,MN=2.5.3.0.3.5

(B)MACH = 3.00

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FIG.41 INTEGRATED LAUNCH VEHICLE LAT-DIR.DATA.ALPHA=8 DEGS..MN=2.5.3.0.3.5

(C)MACH = 3.50

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FIG.41 INTEGRATED LAUNCH VEHICLE LAT-DIR.DATA.ALP=8 DEGS..MN=2.5.3.0.3.5

(A)MACH = 2.50

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FIG.41 INTEGRATED LAUNCH VEHICLE LAT-DIR.DATA.ALPHA=8 DEGS.,MN=2.5.3.0.3.5

(B)MACH = 3.00

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FIG.41 INTEGRATED LAUNCH VEHICLE LAT-DIR.DATA.ALPHA 8 DEGS.,MN=2.5,3.0,3.5

(C)MACH = 3.50

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FIG.42 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=-8.RUDDER=-15 DEGS..MN=2.5.3.0.3.5

(A)MACH = 2.50

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FIG.42 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=-8.RUDDER -15 DEGS.,MN=2.5.3.0.3.5

(B)MACH = 3.00

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FIG.42 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=-8,RUDDER=-15 DEGS.,MN=2.5,3.0,3.5

SIDESLIP ANGLE, BETA, DEGREES

SIDE FORCE COEFFICIENT, CY

(C)MACH = 3.50

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FIG.42 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=-8,RUDDER=-15 DEGS.,MN=2.5,3.0,3.5

(A)MACH = 2.50

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FIG.42 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=-8,RUDDER=-15 DEGS..MN=2.5.3.0.3.5

(B)MACH = 3.00

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FIG.42 INTEG. VEHICLE LAT-DIR. DATA.ALPHA -8,RUDDER -15 DEGS.,MN=2.5.3.0.3.5

SIDESLIP ANGLE. BETA. DEGRES

(C)MACH = 3.50

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FIG.42 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=-8,RUDDER=-15 DEGS.,MN=2.5,3.0,3.5

(A)MACH = 2.50

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FIG.42 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=-8,RUDDER=-15 DEGS.,MN=2.5,3.0,3.5

(B)MACH = 3.00

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FIG.42 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=-8,RUDDER=-15 DEGS.,MN=2.5,3.0,3.5

(C)MACH = 3.50

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FIG.42 INTEG. VEHICLE LAT-DIR. DATA, ALPHA=-8, RUDDER.-15 DEGS., MN=2.5.3.0.3.5

(A)MACH = 2.50

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FIG.42 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=-8.RUDDER=-15 DEGS..MN=2.5.3.0.3.5

(B)MACH = 3.00

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FIG.42 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=-8,RUDDER=-15 DEGS.,MN=2.5.3.0.3.5

(C)MACH = 3.50

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FIG.42 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=-8,RUDDER=-15 DEGS..MN=2.5.3.0.3.5

(A)MACH =. 2.50

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FIG.42 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=-8,RUDDER=-15 DEGS.,MN=2.5,3.0,3.5

(B)MACH = 3.00

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FIG.42 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=-8,RUDDER=-15 DEGS.,MN=2.5.3.0.3.5

(C)MACH = 3.50

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FIG.42 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=-8,RUDDER=-15 DEGS.,MN=2.5.3.0.3.5

(A)MACH = 2.50

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FIG.42 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=-8,RUDDER=-15 DEGS.,MN=2.5,3.0,3.5

(B)MACH = 3.00

FIG.42 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=-8,RUDDER=-15 DEGS.,MN=2.5.3.0.3.5

(C)MACH = 3.50

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FIG.42 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=-8.RUDDER=-15 DEGS.,MN=2.5.3.0.3.5

(A)MACH = 2.50

FIG.42 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=-8,RUDDER -15 DEGS.,MN=2.5,3.0,3.5

(B)MACH = 3.00

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FIG.42 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=-8,RUDDER=-15 DEGS.,MN=2.5,3.0,3.5

(C)MACH = 3.50

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FIG.43 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=-4.RUDDER=-15 DEGS..MN=2.5.3.0.3.5

(A)MACH = 2.50

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FIG.43 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=-4,RUDDER=-15 DEGS.,MN=2.5,3.0,3.5

(B)MACH = 3.00

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FIG.43 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=-4,RUDDER=-15 DEGS.,MN=2.5,3.0,3.5

(C)MACH = 3.50

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FIG.43 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=-4.RUDDER=-15 DEGS.,MN=2.5.3.0.3.5

(A)MACH = 2.50

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FIG.43 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=-4,RUDDER=-15 DEGS.,MN=2.5,3.0,3.5

(B)MACH = 3.00

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FIG.43 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=-4.RUDDER=-15 DEGS..MN=2.5.3.0.3.5

(C)MACH = 3.50

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FIG.43 INTEG. VEHICLE LAT-DIR. DATA.ALPHA.ALPHA=-4.RUDDER=-15 DEGS..MN=2.5.3.0.3.5

(A)MACH = 2.50

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FIG.43 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=-4,RUDDER=-15 DEGS.,MN=2.5,3.0,3.5

(B)MACH = 3.00

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FIG.43 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=-4,RUDDER=-15 DEGS.,MN=2.5,3.0,3.5

(C)MACH = 3.50

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FIG.43 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=-4.RUDDER=-15 DEGS..MN=2.5.3.0.3.5

(A)MACH = 2.50

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FIG.43 INTEG. VEHICLE LAT-DIR. DATA.ALPHA.-4.RUDDER.-15 DEGS..MN=2.5.3.0.3.5

(B)MACH = 3.00

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FIG.43 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=-4.RUDDER=-15 DEGS..MN=2.5.3.0.3.5

(C)MACH = 3.50

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FIG.43 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=-4.RUDDER=-15 DEGS..MN=2.5,3.0,3.5
(A)MACH = 2.50

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FIG.43 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=-4,RUDDER=-15 DEGS.,MN=2.5,3.0,3.5

SIDESLIP ANGLE, BETA, DEGREES

NORMAL FORCE COEFFICIENT, CN

(B)MACH = 3.00

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FIG.43 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=-4,RUDDER=-15 DEGS.,MN=2.5,3.0,3.5

(C)MACH = 3.50

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FIG.43 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=-4,RUDDER=-15 DEGS.,MN=2.5,3.0,3.5

(A)MACH = 2.50

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FIG.43 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=-4,RUDDER=-15 DEGS.,MN=2.5,3.0,3.5

(B)MACH = 3.00

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FIG.43 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=-4,RUDDER=-15 DEGS.,MN=2.5,3.0,3.5

(C)MACH = 3.50

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FIG.43 INTEG. VEHICLE LAT-DIR. DATA, ALPHA=-4, RUDDER=-15 DEGS., MN=2.5.3.0.3.5

(A)MACH = 2.50

FIG.43 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=-4,RUDDER=-15 DEGS.,MN=2.5,3.0,3.5

(B)MACH = 3.00

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FIG.43 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=-4,RUDDER -15 DEGS.,MN=2.5.3.0.3.5

(C)MACH = 3.50

FIG.44 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=0. RUDDER=-15 DEGS.,MN=2.5,3.0,3.5

(A)MACH = 2.50

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FIG.44 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=0, RUDDER=-15 DEGS.,MN=2.5,3.0,3.5

(B)MACH = 3.00

FIG.44 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=0. RUDDER=-15 DEGS.,MN=2.5,3.0,3.5

(C)MACH = 3.50

SIDESLIP ANGLE, BETA, DEGREES

SIDE FORCE COEFFICIENT, CY

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FIG.44 INTEG. VEHICLE LAT-DIR. DATA.ALPHA-0. RUDDER -15 DEGS..MN=2.5,3.0,3.5

(A)MACH = 2.50

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FIG.44 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=0, RUDDER=-15 DEGS.,MN=2.5,3.0,3.5

(B)MACH = 3.00

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FIG.44 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=0, RUDDER=-15 DEGS.,MN=2.5,3.0,3.5

(C)MACH = 3.50

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FIG.44 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=0. RUDDER=-15 DEGS.,MN=2.5.3.0.3.5

(A)MACH = 2.50

FIG.44 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=0. RUDDER=-15 DEGS..MN=2.5.3.0.3.5

(B)MACH = 3.00

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FIG.44 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=0, RUDDER=-15 DEGS.,MN=2.5,3.0,3.5

(C)MACH = 3.50

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FIG.44 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=0, RUDDER -15 DEGS.,MN=2.5.3.0,3.5

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(A)MACH = 2.50

FIG.44 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=0. RUDDER=-15 DEGS.,MN=2.5,3.0,3.5

(B)MACH = 3.00

FIG.44 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=0. RUDDER=-15 DEGS.,MN=2.5.3.0,3.5

(C)MACH = 3.50

FIG.44 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=0, RUDDER=-15 DEGS.,MN=2.5,3.0,3.5

(A)MACH = 2.50

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FIG.44 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=0, RUDDER=-15 DEGS.,MN=2.5,3.0,3.5

(B)MACH = 3.00

FIG.44 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=0, RUDDER=-15 DEGS.,MN=2.5.3.0.3.5

(C)MACH = 3.50

FIG.44 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=0, RUDDER=-15 DEGS.,MN=2.5.3.0.3.5

(A)MACH = 2.50

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FIG.44 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=0, RUDDER=-15 DEGS.,MN=2.5,3.0,3.5

(B)MACH = 3.00

FIG.44 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=0. RUDDER=-15 DEGS.,MN=2.5,3.0,3.5

(C)MACH = 3.50

FIG.44 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=0, RUDDER=-15 DEGS.,MN=2.5.3.0.3.5

(A)MACH = 2.50

FIG.44 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=0, RUDDER=-15 DEGS.,MN=2.5.3.0.3.5

(B)MACH = 3.00

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FIG.44 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=0. RUDDER=-15 DEGS..MN=2.5.3.0.3.5

(C)MACH = 3.50

FIG.45 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=4, RUDDER=-15 DEGS.,MN=2.5,3.0,3.5

(A)MACH = 2.50

FIG.45 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=4, RUDDER=-15 DEGS.,MN=2.5.3.0.3.5

(B)MACH = 3.00

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FIG.45 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=4, RUDDER=-15 DEGS.,MN=2.5.3.0.3.5

(C)MACH = 3.50

FIG.45 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=4, RUDDER=-15 DEGS.,MN=2.5,3.0,3.5

(A)MACH = 2.50

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FIG.45 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=4, RUDDER=-15 DEGS.,MN=2.5.3.0.3.5

(B)MACH = 3.00

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FIG.45 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=4, RUDDER=-15 DEGS.,MN=2.5,3.0,3.5

(C)MACH = 3.50

FIG.45 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=4, RUDDER=-15 DEGS.,MN=2.5.3.0.3.5

(A)MACH = 2.50

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FIG.45 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=4, RUDDER=-15 DEGS.,MN=2.5,3.0.3.5

(B)MACH = 3.00

FIG.45 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=4, RUDDER=-15 DEGS..MN=2.5,3.0,3.5

(C)MACH = 3.50

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FIG.45 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=4, RUDDER=-15 DEGS.,YN=2.5,3.0,3.5
(A)MACH = 2.50

FIG.45 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=4, RUDDER -15 DEGS.,MCH=2.5,3.0,3.5

(B)MACH = 3.00

FIG.45 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=4, RUDDER=-15 DEGS.,MN=2.5,3.0,3.5

(C)MACH = 3.50

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FIG.45 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=4. RUDDER=-15 DEGS..MN=2.5,3.0,3.5

(A)MACH = 2.50

FIG.45 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=4, RUDDER=-15 DEGS.,MN=2.5,3.0,3.5

(B)MACH = 3.00

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FIG.45 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=4, RUDDER=-15 DEGS.,MN=2.5,3.0,3.5

(C)MACH = 3.50

FIG.45 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=4, RUDDER=-15 DEGS.,MN=2.5,3.0,3.5

(A)MACH = 2.50

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FIG.45 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=4, RUDDER -15 DEGS.,MN=2.5,3.0,3.5

(B)MACH = 3.00

FIG.45 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=4, RUDDER=-15 DEGS.,MN=2.5.3.0.3.5

(C)MACH = 3.50

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FIG.45 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=. RUDDER=-15 DEGS..MN=2.5.3.0.3.5

CA)MACH = 2.50

FIG.45 INTEG. VEHICLE LAT-DIR. DATA, ALPHA=4, RUDDER=-15 DEGS., MN=2.5,3.0,3.5

(B)MACH = 3.00

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FIG.45 INTEG. VEHICLE LAT-DIR. DATA,ALPHA. RUDDER 5 DEGS.,MN=2.5,3.0,3.5

(C)MACH = 3.50

FIG.46 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=6. RUDDER=-15 DEGS..MN=2.5.3.0.4.5

(A)MACH = 2.50

FIG.46 INTEG. VEHICLE LAT-DIR. DATA,ALPHA= RUDDE .15 DEGS.,MA=3.5,3.0,3.5

(B)MACH = 3.00

FIG. 46 INTEG. VEHICLE LAT-DIR. DATA, ALPHA=6, RUDDER=-15 DEGS., MACH=3.0-3.5

(C) MACH = 3.50

SIDESLIP ANGLE, BETA, DEGREES

SIDE FORCE COEFFICIENT, CY

FIG.46 INTEG. VEHICLE LAT-DIR. DATA,ALPHA., RUDDE.=-15 DEGS.,MN=2.5,3.3,3.5

(A)MACH = 2.50

FIG.46 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=6, RUDDER=-15 DEGS.,MN=2.5,3.0,3.5

(B)MACH = 3.00

FIG.46 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=0. RUDDER=-15 DEGS.,MN=2.5,3.0,3.5

SIDESLIP ANGLE. BETA. DEGREES

YAWING MOMENT COEFFICIENT, CYN, (BODY AXIS)

(C)MACH = 3.50

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FIG.46 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=6, RUDDER=-15 DEGS.,MN=2.5,3,3,3.5

(A)MACH = 2.50

FIG.46 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=6, RUDDER=-15 DEGS.,MN=2.5,3.0,3.5

(B)MACH = 3.00

FIG.46 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=6, RUDDER=-15 DEGS.,MN=2.5,3.0,3.5

(C)MACH = 3.50

FIG.46 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=6. RUDDER=-15 DEGS..MN=2.5.3.0.3.5

(A)MACH = 2.50

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FIG.46 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=6, RUDDER=-15 DEGS.,MN=2.5.3.0.3.5

(B)MACH = 3.00

FIG.46 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=0. RUDDER=-15 DEGS.,MN=2.5.3.0.3.5

(C)MACH = 3.50

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FIG.46 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=6, RUDDER=-15 DEGS.,MN=2.5.3.0.3.5

(A)MACH = 2.50

FIG.46 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=6. RUDDER=-15 DEGS.,MN=2.5.3.0.3.5

(B)MACH = 3.00

FIG.46 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=6, RUDDER=-15 DEGS.,MN=2.5,3.0,3.5

(C)MACH = 3.50

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FIG.46 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=6, RUDDER=-15 DEGS.,MN=2.5.3.0.3.5

(A)MACH = 2.50

FIG.46 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=6, RUDDER=-15 DEGS.,MN=2.5,3.0,3.5

(B)MACH = 3.00

FIG.46 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=6. RUDDER=-15 DEGS.,MN=2.5.3.0.3.5

(C)MACH = 3.50

FIG.46 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=6, RUDDER=-15 DEGS.,MN=2.5,3.0,3.5

(A)MACH = 2.50

FIG.46 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=6. RUDDER=-15 DEGS..MN=2.5.3.0.3.5

(B)MACH = 3.00

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FIG.46 INTEG. VEHICLE LAT-DIR. DATA.,ALPHA=6, RUDDER=-15 DEGS.,MN=2.5,3.0,3.5

(C)MACH = 3.50

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FIG.47 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=8, RUDDER--15 DEGS.,MN=2.5,3.0,3.5

(A)MACH = 2.50

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FIG.47 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=8, RUDDER=-15 DEGS.,MN=2.5,3.0,3.5

(B)MACH = 3.00

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FIG.47 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=8, RUDDER=-15 DEGS.,MN=2.5,3.0,3.5

(C)MACH = 3.50

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FIG.47 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=8, RUDDER=-15 DEGS.,MN=2.5,3.0,3.5

(A)MACH = 2.50

FIG.47 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=8, RUDDER=-15 DEGS.,MN=2.5,3.0,3.5

(B)MACH = 3.00

FIG.47 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=8, RUDDER=-15 DEGS.,MN=2.5,3.0,3.5

(C)MACH = 3.50

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FIG.47 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=8, RUDDER=-15 DEGS.,MN=2.5,3.0,3.5

(A)MACH = 2.50

FIG.47 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=8, RUDDER=-15 DEGS.,MN=2.5,3.0,3.5

(B)MACH = 3.00

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FIG.47 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=8, RUDDER=-15 DEGS.,MN=2.5,3.0,3.5

(C)MACH = 3.50

FIG.47 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=8, RUDDER=-15 DEGS.,MN=2.5,3.0,3.5

(A)MACH = 2.50

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FIG.47 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=8, RUDDER=-15 DEGS.,MN=2.5.3.0.3.5

(B)MACH = 3.00

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FIG.47 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=8, RUDDER=-15 DEGS..MN=2.5.3.0.3.5

(C)MACH = 3.50

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FIG.47 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=8, RUDDER=-15 DEGS.,MN=2.5.3.0.3.5

(A)MACH = 2.50

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FIG.47 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=8, RUDDER=-15 DEGS.,MN=2.5.3.0.3.5

(B)MACH = 3.00

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FIG.47 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=8, RUDDER=-15 DEGS.,MN=2.5.3.0.3.5

(C)MACH = 3.50

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FIG.47 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=8, RUDDER=-15 DEGS.,MN=2.5.3.0.3.5

(A)MACH = 2.50

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FIG.47 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=8, RUDDER=-15 DEGS..MN=2.5.3.0.3.5

SIDESLIP ANGLE, BETA, DEGREES

(B)MACH = 3.00

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FIG.47 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=8, RUDDER=-15 DEGS.,MN=2.5,3.0,3.5

(C)MACH = 3.50

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FIG.47 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=8, RUDDER:-15 DEGS.,MN=2.5.3.0.3.5

(A)MACH = 2.50

FIG.47 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=8, RUDDER=-15 DEGS.,MN=2.5,3.0,3.5

(B)MACH = 3.00

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FIG.47 INTEG. VEHICLE LAT-DIR. DATA, ALPHA=8, RUDDER=-15 DEGS., MN=2.5.3.0.3.5

(C)MACH = 3.50

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FIG.48 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=-8,RUDDER=-10 DEGS.,MN=2.5.3.0.3.5

(A)MACH = 2.50

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FIG.48 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=-8.RUDDER=-10 DEGS..MN=2.5.3.0.3.5

(B)MACH = 3.00

FIG.48 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=-8,RUDDER=-10 DEGS.,MN=2.5,3.0,3.5

(C)MACH = 3.50

FIG.48 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=-8,RUDDER=-10 DEGS.,MN=2.5.3.0.3.5

(A)MACH = 2.50

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FIG.48 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=-8.RUDDER=-10 DEGS..MN=2.5.3.0.3.5

(B)MACH = 3.00

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FIG.48 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=-8,RUDDER=-10 DEGS.,MN=2.5,3.0,3.5

(C)MACH = 3.50

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FIG.48 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=-8,RUDDER=-10 DEGS.,MN=2.5,3.0,3.5

(A)MACH = 2.50

FIG.48 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=-8,RUDDER=-10 DEGS.,MN=2.5,3.0,3.5

(B)MACH = 3.00

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FIG.48 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=-8,RUDDER=-10 DEGS.,MN=2.5,3.0,3.5

(C)MACH = 3.50

FIG.48 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=-8,RUDDER=-10 DEGS.,MN=2.5.3.0.3.5

(A)MACH = 2.50

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FIG.48 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=-8,RUDDER=-10 DEGS.,MN=2.5,3.0,3.5

(B)MACH = 3.00

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FIG.48 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=-8,RUDDER=-10 DEGS.,MN=2.5.3.0.3.5

(C)MACH = 3.50

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FIG.48 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=-8.RUDDER=-10 DEGS..MN=2.5,3.0,3.5

(A)MACH = 2.50

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FIG.48 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=-8.RUDDER=-10 DEGS..MN=2.5.3.0.3.5

SIDESLIP ANGLE, BETA, DEGREES

NORMAL FORCE COEFFICIENT, CN

(B)MACH = 3.00

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FIG.48 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=-8,RUDDER=-10 DEGS.,MN=2.5.3.0.3.5

(C)MACH = 3.50

FIG.48 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=-9,RUDDER=-10 DEGS.,MN=2.5,3.0,3.5

(A)MACH = 2.50

FIG.48 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=-8,RUDDER=-10 DEGS.,MN=2.5.3.0.3.5

(B)MACH = 3.00

FIG.48 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=-8,RUDDER -10 DEGS.,MN=2.5,3.0,3.5

(C)MACH = 3.50

FIG.48 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=-8,RUDDER=-10 DEGS.,MN=2.5,3.0,3.5

(A)MACH = 2.50

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FIG.48 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=-8,RUDDER=-10 DEGS.,MN=2.5,3.0,3.5

(B)MACH = 3.00

FIG.48 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=-8,RUDDER=-10 DEGS.,MN=2.5,3.0,3.5
(C)MACH = 3.50

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FIG.49 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=-4,RUDDER -10 DEGS.,MN=2.5,3.0,3.5

(A)MACH = 2.50

FIG.49 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=-4,RUDDER=-10 DEGS.,MN=2.5,3.0,3.5

(B)MACH = 3.00

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FIG.49 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=-4.,RUDDER=-10 DEGS.,MN=2.5,3.0,3.5

(C)MACH = 3.50

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FIG.49 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=-4,RUDDER=-10 DEGS.,MN=2.5,3.0,3.5

(A)MACH = 2.50

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FIG.49 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=-4,RUDDER=-10 DEGS.,MN=2.5,3.0,3.5

(B)MACH = 3.00

FIG.49 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=-4,RUDDER=-10 DEGS.,MN=2.5.3.0.3.5

(C)MACH = 3.50

FIG.49 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=-4.RUDDER=-10 DEGS..MN=2.5.3.0.3.5

(A)MACH = 2.50

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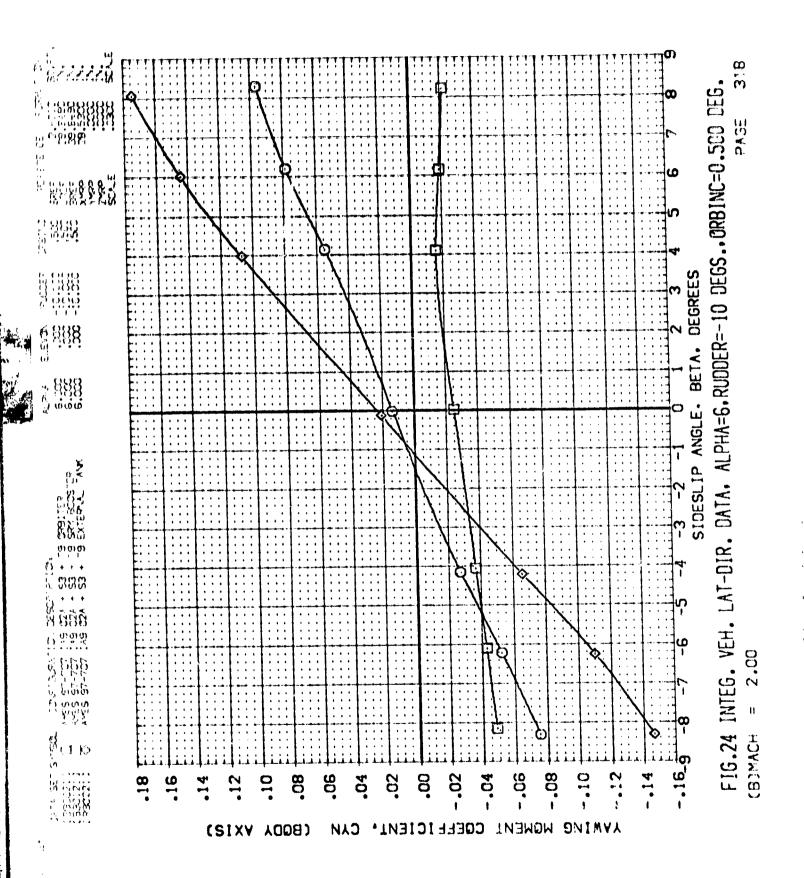FIG.49 INTEG. VEHICLE LAT-DIR. DATA, ALPHA=-4, RUDDER=-10 DEGS., MN=2.5, 3.0, 3.5

(B)MACH = 3.00

FIG.49 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=-4,RUDDER=-10 DEGS.,MN=2.5,3.0,3.5

(C)MACH = 3.50

FIG.49 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=-4.RUDDER=-10 DEGS.,MN=2.5.3.0.3.5

(A)MACH = 2.50

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FIG.49 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=-4,RUDDER -10 DEGS.,MN=2.5.3.0.3.5

(BJMACH = 3.00

FIG.49 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=-4.RUDDER=-10 DEGS..MN=2.5.3.0.3.5
(C)MACH = 3.50

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FIG.49 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=-4.RUDDER=-10 DEGS..MN=2.5.3.0.3.5

(A)MACH = 2.50

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FIG.49 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=-4,RUDDER=-10 DEGS.,MN=2.5,3.0,3.5

(B)MACH = 3.00

PAGE 804

FIG.49 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=-4.RUDDER=-10 DEGS..MN=2.5.3.0.3.5

(C)MACH = 3.50

PAGE 8C5

FIG.49 INTEG. VEHICLE LAT DIR. DATA, ALPHA=-4, RUDDER=-10 DEGS., MN=2.5.3.0.3.5

(A) MACH = 2.50

FIG.49 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=-4,RUDDER=-10 DEGS.,MN=2.5.3.0.3.5

(B)MACH = 3.00

FIG.49 INTEG. VEHICLE LAT-DIR.-DATA.ALPHA=-4.RUDDER=-10 DEGS..MN=2.5.3.0.3.5

(C)MACH = 3.50

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FIG.49 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=-4,RUDDER=-10 DEGS.,MN=2.5.3.0.3.5

(A)MACH = 2.50

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FIG.49 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=-4,RUDDER=-10 DEGS.,MN=2.5,3.0,3.5

(B)MACH = 3.00

PAGE 810

FIG.49 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=-4,RUDDER=-10 DEGS.,MN=2.5.3.0.3.5

(C)MACH = 3.50

FIG.50 INTEG. VEHICLE LAT-DIR. DATA, ALPHA=0, RUDDER=-10 DEGS., MN=2.5,3,0,3,5

(A)MACH = 2.50

FIG.50 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=0.RUDDEF=-10 DEGS.,MN=2.5.3.0.3.5

(B)MACH = 3.00

PAGE 8.3

FIG.50 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=0,RUDDER=-10 DEGS.,M=2.5,3.0,3.5

(C)MACH = 3.50

DATA SET SYMBOL   CONFIGURATION DESCRIPTION
[BBN019]   AMES B7-707 IA9 O2A + S3 + T9 ORBITER
[BBN119]   AMES B7-707 IA9 O2A + S3 + T9 SRM BOOSTER
[BBN219]   AMES B7-707 IA9 O2A + S3 + T9 EXTERNAL TANK

ALPHA	ORBINC	RUDDER	ELEVON
.000	.500	-10.000	.000
.000	.500	-10.000	.000
.000	.500	-10.000	.000

REFERENCE INFORMATION
SREF   2.4210   SQ.FT.
LREF   39.8490   IN.
BREF   39.8490   IN.
XMRP   28.5300   IN.
YMRP   .0000   IN.
ZMRP   .0000   IN.
SCALE   .0300   SCALE

YAWING MOMENT COEFFICIENT, CYN   (BODY AXIS)

SIDESLIP ANGLE, BETA, DEGREES

50 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=0,RUDDER=-10 DEGS.,MN=2.5,3.0,3.5

= 2.50

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FIG.50 INTEG. VEHICLE LAT-DIR. DATA, ALPHA=0, RUDDER=-10 DEGS., MN=2.5, 3.0, 3.5

(B) MACH = 3.00

FIG.50 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=0.RUDDER=-10 DEGS.,MN=2.5.3.0.3.5

(C)MACH = 3.50

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FIG.50 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=0,RUDDER=-10 DEGS.,MN=2.5.3.0.3.5

(A)MACH = 2.50

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FIG.50 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=0,RUDDER=-10 DEGS.,MN=2.5,3.0,3.5

(B)MACH = 3.00

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FIG.50 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=0,RUDDER=-10 DEGS.,MN=2.5.3.0.3.5

(C)MACH = 3.50

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FIG.50 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=0,RUDDER=-10 DEGS.,MN=2.5.3.0.3.5

(A)MACH = 2.50

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FIG.50 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=0.RUDDER=-10 DEGS..MN=2.5,3.0,3.5

(B)MACH = 3.00

PAGE 822

FIG.50 INTEG. VEHICLE LAT-DIR. DATA. ALPHA=0. RUDDER=-10 DEGS., MN=2.5.3.0.3.5

(C)MACH = 3.50

FIG.50 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=0.RUDDER=-10 DEGS..MN=2.5.3.0.3.5

(A)MACH = 2.50

FIG.50 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=0,RUDDER=-10 DEGS.,MN=2.5,3.0,3.5

(B)MACH = 3.00

PAGE B25

FIG.50 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=0,RUDDER=-10 DEGS.,MN=2.5,3.0,3.5

(C)MACH = 3.50

FIG.50 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=0,RUDDER=-10 DEGS.,MN=2.5.3.0.3.5

CA MACH = 2.50

FIG.50 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=O.RUDDER=-10 DEGS..MN=2.5.3.0.3.5

(B)MACH = 3.00

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FIG.50 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=0.RUDDER=-10 DEGS..MN=2.5.3.0.3.5

(C)MACH = 3.50

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FIG.50 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=0.RUDDER=-10 DEGS.,MN=2.5.3.0.3.5

(A)MACH = 2.50

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FIG.50 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=0,RUDDER=-10 DEGS.,MN=2.5.3.0.3.5

(B)MACH = 3.00

PAGE 831

FIG.50 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=0.RUDDER=-10 DEGS.,MN=2.5,3.0,3.5

(C)MACH = 3.50

PAGE 832

FIG.51 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=4,RUDDER=-10 DEGS.,MN=2.5,3.0,3.5

(A)MACH = 2.50

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FIG.51 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=4,RUDDER=-10 DEGS.,MN=2.5.3.0.3.5

(B)MACH = 3.00

FIG.51 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=4,RUDDER=10 DEGS.,MN=2.5,3.0,3.5

(C)MACH = 3.50

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FIG.51 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=4,RUDDER=-10 DEGS.,MN=2.5.3.0.3.5

(A)MACH = 2.50

FIG.51 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=4,RUDDER=-10 DEGS.,MN=2.5.3.0.3.5

(B)MACH = 3.00

FIG.51 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=4,RUDDER=-10 DEGS..MN=2.5,3.0,3.5

(C)MACH = 3.50

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FIG.51 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=4,RUDDER= 10 DEGS..MN=2.5,3.0,3.5

(A)MACH = 2.50

FIG.51 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=4,RUDDER=-10 DEGS.,MN=2.5,3.0,3.5

(B)MACH = 3.00

FIG.51 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=4.RUDDER=-10 DEGS..MN=2.5.3.0.3.5

(C)MACH = 3.50

FIG.51 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=4.RUDDER=-10 DEGS..MN=2.5.3.0.3.5

(A)MACH = 2.50

FIG.51 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=4.RUDDER= 10 DEGS..MN=2.5,3.0,3.5

(B)MACH = 3.00

FIG.51 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=4,RUDDER=-10 DEGS.,MN=2.5,3.0,3.5

(C)MACH = 3.50

PAGE 844

FIG.51 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=4,RUDDER=-10 DEGS.,MN=2.5.3.0.3.5

(A)MACH = 2.50

PAGE 845

FIG.51 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=4,RUDDER=-10 DEGS.,MN=2.5,3.0,3.5

(B)MACH = 3.00

PAGE 846

FIG.51 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=4,RUDDER=-10 DEGS.,MN=2.5,3.0,3.5

(C)MACH = 3.50

PAGE 847

FIG.51 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=4,RUDDER=-10 DEGS.,MN=2.5.3.0.3.5

(A)MACH = 2.50

PAGE 848

FIG.51 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=4,RUDDER=-10 DEGS.,MN=2.5.3.0.3.5

SIDESLIP ANGLE, BETA, DEGREES

(B)MACH = 3.00

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FIG.51 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=4,RUDDER=-10 DEGS.,MN=2.5,3.0,3.5

(C)MACH = 3.50

PAGE 852

FIG.51 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=4.RUDDER=-10 DEGS..MN=2.5.3.0.3.5

(A)MACH = 2.50

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FIG.51 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=4,RUDDER=-10 DEGS.,MN=2.5,3.0,3.5

(B)MACH = 3.00

FIG.51 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=4,RUDDER= 10 DEGS.,MN=2.5.3.0.3.5

(C)MACH = 3.50

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FIG.52 INTEG. VEHICLE LAT-DIR. DATA, ALPHA=6, RUDDER=-10 DEGS., MN=2.5,3.0,3.5

(A)MACH = 2.50

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FIG.52 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=6,RUDDER=-10 DEGS.,MN=2.5,3.0,3.5

(B)MACH = 3.00

PAGE 855

FIG.52 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=6,RUDDER=-10 DEGS.,MN=2.5,3.0,3.5

(C)MACH = 3.50

FIG.52 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=6.RUDDER=-10 DEGS..MN=2.5.3.0.3.5

SIDESLIP ANGLE. BETA. DEGREES

(A)MACH = 2.50

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FIG.52 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=6.RUDDER=-10 DEGS.,MN=2.5,3.0,3.5

(B)MACH = 3.00

PAGE 858

FIG.52 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=6,RUDDER=-10 DEGS.,MN=2.5,3.0,3.5

SIDESLIP ANGLE, BETA, DEGREES

YAWING MOMENT COEFFICIENT, CYN   (BODY AXIS)

(C)MACH = 3.50

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FIG.52 INTEG. VEHICLE LAT-DIR. DATA, ALPHA=6, RUDDER=-10 DEGS., MN=2.5, 3.0, 3.5

(A)MACH = 2.50

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FIG.52 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=6,RUDDER=-10 DEGS.,MN=2.5.3.0.3.5

(B)MACH = 3.00

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FIG.52 INTEG. VEHICLE LAT-DIR. DATA, ALPHA=6, RUDDER=-10 DEGS., MN=2.5,3.0,3.5

(C)MACH = 3.50

FIG.52 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=6,RUDDER=-10 DEGS.,MN=2.5.3.0.3.5

(A)MACH = 2.50

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FIG.52 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=6,RUDDER=-10 DEGS.,MN=2.5,3.0,3.5

(B)MACH = 3.00

FIG.52 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=6,RUDDER=-10 DEGS.,MN=2.5,3.0,3.5

(C)MACH = 3.50

FIG.52 INTEG. VEHICLE LAT-DIR. DATA, ALPHA=6, RUDDER=-10 DEGS., MN=2.5,3.0,3.5

(A)MACH = 2.50

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FIG.52 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=6,RUDDER=-10 DEGS.,MN=2.5.3.0.3.5

(B)MACH = 3.00

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FIG.52 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=6,RUDDER=-10 DEGS.,MN=2.5.3.0.3.5

(C)MACH = 3.50

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FIG.52 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=6.RUDDER=-10 DEGS..MN=2.5.3.0.3.5

(A)MACH = 2.50

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FIG.52 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=6,RUDDER=-10 DEGS.,MN=2.5,3.0,3.5

(B)MACH = 3.00

FIG.52 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=6,RUDDER=-10 DEGS.,MN=2.5,3.0,3.5

(C)MACH = 3.50

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FIG.52 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=6,RUDDER=-10 DEGS.,MN=2.5,3.0,3.5

(A)MACH = 2.50

FIG.52 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=6.RUDDER=-10 DEGS.,MN=2.5,3.0,3.5

(B)MACH = 3.00

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FIG.52 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=6,RUDDER=-10 DEGS.,MN=2.5,3.0,3.5

(C)MACH = 3.50

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FIG.53 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=8,RUDDER=-10 DEGS.,MN=2.5,3.0,3.5

(A)MACH = 2.50

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FIG.53 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=8.RUDDER=-10 DEGS..MN=2.5.3.0.3.5

(B)MACH = 3.00

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FIG.53 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=8,RUDDER=-10 DEGS.,MN=2.5.3.0.3.5

(C)MACH = 3.50

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FIG.53 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=8,RUDDER=-10 DEGS.,MN=2.5,3.0,3.5

(A)MACH = 2.50

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FIG.53 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=8,RUDDER=-10 DEGS.,MN=2.5,3.0,3.5

(B)MACH = 3.00

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FIG.53 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=8,RUDDER=-10 DEGS.,MN=2.5,3.0,3.5

(C)MACH = 3.50

PAGE 830

FIG.53 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=8,RUDDER=-10 DEGS.,MN=2.5,3.0,3.5

(A)MACH = 2.50

FIG.53 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=8,RUDDER=-10 DEGS.,MN=2.5,3.0,3.5

(B)MACH = 3.00

FIG.53 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=8,RUDDER=-10 DEGS.,M=2.5,3.0,3.5

(C)MACH = 3.50

FIG.53 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=8,RUDDER=-10 DEGS.,MN=2.5,3.0,3.5

(A)MACH = 2.50

FIG.53 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=8,RUDDER=-10 DEGS.,MN=2.5,3.0,3.5

SIDESLIP ANGLE, BETA, DEGREES

FOREBODY AXIAL FORCE COEFFICIENT, CAF

(B)MACH   =   3.00

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FIG.53 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=8,RUDDER=-10 DEGS.,MN=2.5,3.0,3.5

CO)MACH = 3.50

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FIG.53 INTEG. VEHICLE LAT-DIR. DATA.,ALPHA=8,RUDDER=-10 DEGS.,MN=2.5.3.0.3.5

(A)MACH = 2.50

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FIG.53 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=8,RUDDER=-10 DEGS.,MN=2.5,3.0,3.5

(B)MACH = 3.00

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FIG.53 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=8,RUDDER=-10 DEGS.,MN=2.5,3.0,3.5

(C) MACH = 3.50

PAGE 889

FIG.53 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=8,RUDDER=-10 DEGS.,MN=2.5.3.0.3.5

(A)MACH = 2.50

FIG.53 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=8,RUDDER=-10 DEGS.,MN=2.5,3.0,3.5

(B)MACH = 3.00

FIG.53 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=8,RUDDER=-10 DEGS.,MN=2.5,3.0,3.5

(C)MACH = 3.50

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FIG.53 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=8,RUDDER=-10 DEGS.,MN=2.5.3.0.3.5

(A)MACH = 2.50

FIG.53 INTEG. VEHICLE LAT-DIR. DATA,ALPHA=8,RUDDER=-10 DEGS.,MN=2.5,3.0,3.5

(B)MACH = 3.00

FIG.53 INTEG. VEHICLE LAT-DIR. DATA.ALPHA=8.RUDDER= 0 DEGS..MN=2.5.3.0.3.5

(C)MACH = 3.50

APPENDIX

TABULATED SOURCE DATA

Plotted data listings available on request
from the Data Management System.

DATE 25 OCT 73   TABULATED SOURCE FORCE DATA-1A9B

(B5C001) (04 OCT 73)

AMES 97-727 1A9 O2A + S3 + T9 ORBITER

PARAMETRIC DATA

REFERENCE DATA

SREF =	2.4210 SQ.FT.	XMRF =	28.5300 IN.	
LREF =	39.8490 IN.	YMRF =	.0000 IN.	
BREF =	39.8490 IN.	ZMRF =	.0000 IN.	
SCALE =	.0300 SCALE			

BETA =	.000
RUDDER =	.000
RUDFLR =	.000

ORBINC =	.500
ELEVON =	.000

RUN NO. 341/ 0   RN/L = 2.79   GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CLM	CA	CAF	CBL	CYN	CY
1.555	-7.930	-.21000	.18712	.13490	.09690	-.00167	.00480	-.00760
1.555	-5.850	-.14200	.13257	.13210	.09560	-.00212	.00470	-.00740
1.555	-3.760	-.06600	.07351	.13040	.09260	-.00173	.00370	-.00590
1.555	-1.690	.01300	.01243	.13050	.09230	-.00131	.00260	-.00430
1.555	.420	.09700	-.05037	.13080	.09190	-.00118	.00220	-.00340
1.555	2.490	.17800	-.11737	.12990	.09190	-.00100	.00160	-.00270
1.555	4.570	.25400	-.16580	.12880	.09140	-.00069	.00100	-.00190
1.555	6.640	.32400	-.21661	.12850	.09060	-.00039	.00090	-.00110
1.555	8.730	.38700	-.26115	.12720	.08930	-.00014	.00070	-.00170
GRADIENT		.03963	-.02886	-.00018	-.00013	.00011	-.00031	.00046

RUN NO. 351/ 0   RN/L = 2.27   GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CLM	CA	CAF	CBL	CYN	CY
2.000	-7.870	-.14000	.13892	.13310	.10690	.00048	.00310	-.00240
2.000	-5.810	-.09400	.10225	.12910	.10200	.00046	.00250	-.00170
2.000	-3.750	-.04700	.06476	.12550	.09780	.00059	.00180	-.00080
2.000	-1.700	.00700	.02181	.12200	.09300	.00061	.00070	-.00080
2.000	.360	.06600	-.02501	.12010	.09160	.00080	.00040	-.00230
2.000	2.410	.12900	-.07345	.11880	.08890	.00057	-.00070	-.00260
2.000	4.460	.19400	-.12289	.11790	.08760	.00047	-.00090	-.00260
2.000	6.520	.26000	-.17385	.11680	.08660	.00114	-.00310	-.00440
2.000	8.570	.31400	-.21474	.11790	.08700	.00086	-.00290	-.00370
GRADIENT		.02942	-.02292	-.00090	-.00119	-.00001	-.00035	.00042

DATE 05 OCT 73   TABULATED SOURCE FORCE DATA-1A98

(B80002)   (04 OCT 73)

AMES 97-707 IA9 O2A + S3 + T9 ORBITER

REFERENCE DATA

			PARAMETRIC DATA	
SREF =	2.4210 SQ.FT.	XMRF = 28.5305 IN.	ALPHA =	8.000 ORBINC = .500
LREF =	39.8495 IN.	YMRF = .0000 IN.	RUDDER =	.000 ELEVON = .000
BREF =	39.8490 IN.	ZMRF = .0000 IN.	RUDFLR =	.000
SCALE =	.0320 SCALE			

RUN NO. 342/ 0   RN/L = 2.61   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
1.555	-7.120	.40700	-.28014	.13060	.08700	.04284	-.05540	.09310
1.555	-5.060	.40200	-.27490	.13000	.08670	.02840	-.03910	.05710
1.555	-2.980	.39400	-.26986	.12810	.08610	.02037	-.02590	.04310
1.555	5.300	.40100	-.27429	.13090	.08690	-.02666	.03100	-.03810
1.555	7.360	.40200	-.27536	.13100	.08610	-.04087	.05590	-.09400
1.555	9.430	.40000	-.27404	.12820	.08470	-.05942	.08970	-.14240
1.555		.00000	.00000	.00000	.00000	.00000	.00000	.00000
GRADIENT								

RUN NO. 360/ 0   RN/L = 2.30   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
2.000	-8.300	.33100	-.23544	.11160	.08200	.05175	-.08170	.13290
2.000	-6.220	.31700	-.21974	.11530	.08470	.03833	-.05880	.09500
2.000	-4.140	.31500	-.21632	.11770	.08680	.02490	-.03620	.05900
2.000	4.160	.31000	-.21388	.11670	.08610	-.02815	.04500	-.07040
2.000	6.290	.31100	-.21665	.11490	.08310	-.04334	.06870	-.10900
2.000	8.350	.32700	-.23295	.11270	.08040	-.05481	.08710	-.14390
2.000		-.00160	.00029	.00012	-.00012	-.00632	.00978	-.01559
GRADIENT								

DATE 05 OCT 73   TABULATED SOURCE FORCE DATA-1A9B

AMES 97-707 1A9 O2A + S3 + T9 ORBITER   (BBC003)   (04 OCT 73)

PARAMETRIC DATA

REFERENCE DATA

SREF = 2.4210 SQ.FT.   XMRP = 26.5390 IN.
LREF = 39.6490 IN.   YMRP = .0000 IN.
BREF = 39.6490 IN.   ZMRP = .0000 IN.
SCALE = .0300 SCALE

ALPHA = 6.000   ORBINC = .500
RUDDER = .000   ELEVON = .000
RUDFLR = .000

RUN NO. 343/ 0   RNVL = 2.80   GRADIENT INTERVAL = -5.00/ 5.00

BETA	CN	CLM	CA	CAF	CBL	CYN	CY
-7.100	.34400	-.23425	.13180	.08890	.04477	-.05920	.09940
-5.040	.34400	-.23311	.13100	.09020	.03042	-.03480	.06410
-2.970	.34300	-.23125	.12890	.08890	.02170	-.03010	.04820
5.280	.34500	-.23284	.13110	.09050	-.02804	.03270	-.06110
7.330	.34300	-.23231	.13220	.09020	-.04357	.05920	-.09940
9.390	.35300	-.23989	.12960	.08720	-.06234	.09440	-.14940
GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000

MACH
1.555
1.555
1.555
1.555
1.555
1.555

RUN NO. 359/ 0   RNVL = 2.30   GRADIENT INTERVAL = -5.00/ 5.00

BETA	CN	CLM	CA	CAF	CBL	CYN	CY
-8.290	.28300	-.19801	.11310	.08290	.05317	-.08690	.13990
-6.200	.26600	-.18123	.11650	.08550	.04028	-.06440	.10250
-4.130	.26000	-.17464	.11810	.08700	.02527	-.03980	.06390
4.140	.25500	-.17112	.11890	.08670	-.02906	.04760	-.07430
6.220	.25700	-.17494	.11610	.08470	-.04462	.07360	-.11580
8.310	.27900	-.19556	.11460	.08230	-.05686	.09310	-.15220
GRADIENT	-.00060	.02243	.00010	-.00024	-.00657	.01057	-.01671

MACH
2.000
2.000
2.000
2.000
2.000
2.000

DATE 03 OCT 73   TABLULATED SOURCE FORCE DATA-1A9B

(BBCOO4)   (04 OCT 73)

AMES 97-707 1A9 O2A + S3 + T9 ORBITER

PARAMETRIC DATA

REFERENCE DATA

SREF =	2.4210 SQ.FT.	XMRP =	28.5500 IN.
LREF =	39.8490 IN.	YMRP =	.0000 IN.
BREF =	39.8490 IN.	ZMRP =	.0000 IN.
SCALE =	.0300 SCALE		

ALPHA =	4.000
RUDDER =	.000
RUDFLR =	.000

ORBINC =	.500
ELEVON =	.000

RUN NO. 344/ 0   RN/L =   2.61   GRADIENT INTERVAL =   -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
1.555	-7.080	.27600	-.18622	.13190	.08980	.04720	-.06300	.10530
1.555	-5.040	.27420	-.18411	.13120	.09060	.03169	-.03800	.06900
1.555	-2.970	.26600	-.17814	.12940	.09010	.02286	-.03340	.05270
1.555	5.270	.27800	-.18562	.13220	.09210	-.03060	.03680	-.06750
1.555	7.310	.27700	-.18545	.13280	.09160	-.04709	.06450	-.10720
1.555	9.350	.28900	-.19441	.13030	.08830	-.06513	.09970	-.15670
GRADIENT		.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 358/ 0   RN/L =   2.31   GRADIENT INTERVAL =   -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
2.000	-8.260	.22800	-.15652	.11420	.08440	.05535	-.09230	.14830
2.000	-6.190	.20800	-.13738	.11720	.08610	.04184	-.06890	.10890
2.000	-4.120	.19800	-.12871	.11850	.08750	.02660	-.04420	.06990
2.000	4.120	.19600	-.12671	.11930	.08790	-.02960	.05020	-.07850
2.000	6.190	.20500	-.13445	.11690	.08620	-.04555	.07700	-.12090
2.000	8.270	.22700	-.15517	.11610	.08420	-.05923	.10010	-.16170
GRADIENT		-.00024	.02024	.00010	.02005	-.00682	.01146	-.01797

DATE 05 OCT 73   TABULATED SOURCE FORCE DATA-1A9B

(DBOO05)   (04 OCT 73)

AMES 97-707 1A9 O2A + S3 + T9 ORBITER

REFERENCE DATA

SREF =	2.4210 SQ.FT.	XMRP =	28.5390 IN.
LREF =	39.8490 IN.	YMRP =	.0000 IN.
BREF =	39.8490 IN.	ZMRP =	.0000 IN.
SCALE =	.0390 SCALE		

PARAMETRIC DATA

ALPHA =	2.000	ORBINC =	.500
RUDDER =	.000	ELEVON =	.000
RUDFLR =	.000		

RUN NO. 345/ 0   RNVL =   2.62   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
1.555	-7.090	.20400	-.13399	.13190	.08990	.05045	-.06930	.11320
1.555	-5.040	.20100	-.13171	.13140	.09100	.03426	-.04340	.07620
1.555	-2.980	.18900	-.12268	.12980	.09070	.02597	-.03620	.05620
1.555	5.230	.20700	-.13439	.13240	.09260	-.03352	.04290	-.07590
1.555	7.300	.20500	-.13637	.13210	.09190	-.05065	.06990	-.11550
1.555	9.350	.23100	-.15375	.13120	.08930	-.06942	.10610	-.16630
GRADIENT		.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 357/ 0   RNVL =   2.31   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
2.000	-8.270	.16700	-.11064	.11410	.08470	.05548	-.09390	.15190
2.000	-6.200	.14500	-.09926	.11690	.08730	.04232	-.07140	.11270
2.000	-4.070	.13550	-.08081	.11860	.08830	.02669	-.04570	.07130
2.000	4.110	.13700	-.08162	.12020	.08900	-.02969	.05130	-.08020
2.000	6.180	.14700	-.09981	.11780	.08790	-.04634	.08010	-.12550
2.000	8.260	.17200	-.11285	.11650	.08620	-.06128	.10620	-.17040
GRADIENT		.00024	-.00010	.00020	.00009	-.00609	.01186	-.01852

DATE 23 OCT 73   TABULATED SOURCE FORCE DATA-1A9B

(B80008)   (04 OCT 73)

AMES 97-727 1A9 O2A + S3 + T9 ORBITER

PARAMETRIC DATA

ALPHA =	.000	ORBINC = .500
RUDDER =	.000	ELEVON = .000
RUDFLR =	.000	

REFERENCE DATA

SREF =	2.4210 SQ.FT.	XMRP = 28.5300 IN.
LREF =	39.8490 IN.	YMRP = .0000 IN.
BREF =	39.8490 IN.	ZMRP = .0000 IN.
SCALE =	.0300 SCALE	

RUN NO. 346/ 0   RNVL = 2.81   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
1.555	-7.100	.12100	-.07146	.13020	.09040	.05154	-.07260	.12010
1.555	-5.050	.11900	-.07104	.12960	.08970	.03573	-.04970	.08420
1.555	-2.980	.10600	-.06033	.13010	.09090	.02430	-.03870	.05940
1.555	5.260	.12600	-.07449	.13190	.09260	-.03610	.05010	-.08640
1.555	7.310	.12970	-.07649	.13190	.09220	-.05275	.07540	-.12440
1.555	9.360	.14890	-.09184	.13040	.09010	-.07170	.11170	-.17550
GRADIENT		.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 356/ 0   RNVL = 2.31   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
2.000	-8.290	.10900	-.06567	.11570	.08690	.05803	-.09870	.15940
2.000	-6.210	.08400	-.04370	.11830	.08870	.04305	-.07270	.11550
2.000	-.010	.06900	-.02743	.11820	.08860	-.00255	.00480	-.00790
2.000	4.130	.08100	-.03893	.11870	.08860	-.03390	.05810	-.09160
2.000	6.200	.09900	-.05136	.11750	.08810	-.05020	.08720	-.13770
GRADIENT		.00290	-.02278	.00012	.00000	-.00748	.01287	-.02027

DATE 03 OCT 73   TABULATED SOURCE FORCE DATA-1A98

(BD007)   (04 OCT 73)

AMES 97-707 1A9 O2A + S3 + T9 ORBITER

PARAMETRIC DATA

REFERENCE DATA

SREF = 2.4210 SQ.FT.   XMRP = 28.3300 IN.
LREF = 39.6490 IN.   YMRP = .0000 IN.
BREF = 39.6490 IN.   ZMRP = .0000 IN.
SCALE = .0300 SCALE

ALPHA = -2.000   ORBINC = .900
RUDDER =   .000   ELEVON = .000
RUDFLR =   .000

RUN NO. 347/ 0   RN/L = 2.81   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
1.555	-7.120	.04200	-.01156	.12900	.09040	.05365	-.07840	.12900
1.555	-5.060	.03800	-.00929	.12910	.08990	.03857	-.05710	.09400
1.555	-3.000	.02600	.00019	.12970	.09100	.02562	-.04220	.06450
1.555	5.250	.04200	-.01054	.13090	.09280	-.03743	.05590	-.09990
1.555	7.310	.04600	-.01294	.13150	.09320	-.05400	.08030	-.13230
1.555	9.360	.06300	-.02723	.12910	.09090	-.07508	.11680	-.16390
1.557	GRADIENT	-.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 355/ 0   RN/L = 2.32   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
2.000	-8.310	.05200	-.02103	.11900	.09090	.06371	-.11070	.17990
2.000	-6.230	.02800	-.00063	.12190	.09230	.04762	-.08140	.12390
2.000	-4.160	.01700	.01216	.12320	.09320	.03104	-.05210	.08270
2.000	4.120	.01700	.01297	.12360	.09400	-.03361	.05970	-.09260
2.000	6.180	.03200	-.00031	.12200	.09330	-.05101	.09020	-.14080
2.000	8.270	.05700	-.02338	.11980	.09110	-.06652	.11840	-.18490
2.000	GRADIENT	-.00000	.00010	.00005	.00010	-.00781	.01350	-.02117

DATE 25 OCT 73   TABULATED SOURCE FORCE DATA-1A9B

(BB0009)   (24 OCT 73)

AMES 97-TO/ 1A9 O2A + S3 + T9 ORBITER

PARAMETRIC DATA

REFERENCE DATA

SREF = 2.4210 SQ.FT.	XMRP = 26.5300 IN.	ALPHA = -4.000 ORBINC = .900
LREF = 39.8490 IN.	YMRP = .0000 IN.	RUDER = .000 ELEVON = .000
BREF = 39.8490 IN.	ZMRP = .0000 IN.	RUDFLR = .000
SCALE = .0390 SCALE		

RUN NO. 348/ 0   RN/L = 2.80   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
1.555	-8.160	-.02600	.04187	.12880	.09090	.06550	-.10400	.16430
1.555	-6.140	-.03700	.04852	.12830	.09070	.04825	-.07450	.12130
1.555	-3.010	-.05400	.06165	.12920	.09120	.02748	-.04700	.07090
1.555	5.250	-.03400	.04776	.12900	.09240	-.04018	.06520	-.10560
1.555	7.310	-.03100	.04659	.13080	.09370	-.05681	.08900	-.14430
1.555	9.360	-.01200	.03072	.12870	.09150	-.07516	.12460	-.19900
GRADIENT		.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 354/ 0   RN/L = 2.41   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
2.000	-8.320	-.00700	.02544	.12130	.09350	.06563	-.11440	.18100
2.000	-6.240	-.02700	.04481	.12480	.09570	.04979	-.08540	.13380
2.000	-4.170	-.03900	.05657	.12600	.09670	.03290	-.05520	.08640
2.000	4.100	-.03700	.05634	.12710	.09810	-.03458	.06070	-.09440
2.000	6.180	-.02300	.04365	.12600	.09660	-.05285	.09340	-.14560
2.000	8.270	-.00100	.02302	.12230	.09380	-.06860	.12240	-.19360
GRADIENT		.00024	-.00203	.00013	.00017	-.00816	.01401	-.02186

DATE 03 OCT 73   TABULATED SOURCE FORCE DATA-IA98

(BGOO09)   (04 OCT 73)

AMES 97-717 IA9 OEA · S3 + T9 ORBITER

PARAMETRIC DATA

REFERENCE DATA

SREF =	2.4210 SQ.FT.	XMRP =	28.5350 IN.
LREF =	39.8490 IN.	YMRP =	.0000 IN.
BREF =	39.8490 IN.	ZMRP =	.0000 IN.
SCALE =	.0330 SCALE		

ALPHA =   -6.000   ORBINC =   .500
RUDDER =   .000   ELEVN =   .000
RUDFLR =   .000

RUN NO. 349/ 0   RNVL = 2.80   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
1.555	-8.190	-.09800	.09605	.12840	.09200	.06963	-.11400	.17790
1.555	-6.180	-.10900	.10448	.12870	.09210	.05135	-.08270	.13250
1.555	-4.140	-.12300	.11533	.12890	.09190	.03855	-.06790	.10290
1.555	3.830	-.12400	.11850	.13030	.09450	-.03353	.06110	-.09190
1.555	5.930	-.10400	.10305	.13040	.09470	-.04704	.07830	-.12550
1.555	8.010	-.09500	.09655	.13050	.09430	-.06594	.10850	-.17140
GRADIENT		-.00013	.00037	.00018	.00053	-.00904	.01614	-.02433

RUN NO. 353/ 0   RNVL = 2.31   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
2.000	-8.350	-.06200	.06602	.12350	.09690	.06697	-.11680	.18540
2.000	-6.270	-.07900	.06566	.12830	.10020	.05085	-.08790	.13710
2.000	-4.190	-.08800	.08539	.12950	.10140	.03311	-.05590	.09760
2.000	4.110	-.08300	.09325	.13040	.10240	-.03525	.06170	-.09700
2.000	6.110	-.05100	.06266	.12550	.09860	-.07129	.12620	-.20090
2.000	8.280	-.02060	-.02026	.00011	.00012	-.00824	.01417	-.02224
GRADIENT								

DATE 03 OCT 73   TABULATED SOURCE FORCE DATA-1A9B

AMES 97-707 1A9 02A + S3 + T9 ORBITER   (BB010D) (04 OCT 73)

REFERENCE DATA   PARAMETRIC DATA

SREF	=	2.4210 SQ.FT.	XMRP	=	28.5350 IN.		ALPHA	=	-8.000	ORBINC	=	.500
LREF	=	39.8490 IN.	YMRP	=	.0000 IN.		RUDDER	=	.000	ELEVON	=	.000
BREF	=	39.8490 IN.	ZMRP	=	.0000 IN.		RUDFLR	=	.000			
SCALE	=	.0350 SCALE										

RUN NO. 350/ 0   RNVL = 2.80   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
1.555	-8.240	-.16450	.14735	.12930	.09390	.07280	-.12200	.18900
1.555	-6.220	-.17900	.16005	.12940	.09430	.05472	-.09090	.14240
1.555	-4.170	-.19400	.17235	.13040	.09430	.04124	-.07320	.10930
1.555	3.840	-.18900	.16976	.13070	.09590	-.03638	.06750	-.10020
1.555	5.950	-.17200	.15734	.13110	.09620	-.05012	.08520	-.13470
1.555	8.040	-.16100	.14816	.13070	.09550	-.06927	.11650	-.18270
GRADIENT		.00062	-.00032	.00014	.00020	-.00969	.01757	-.02615

RUN NO. 352/ 0   RNVL = 2.32   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
2.000	-8.420	-.11150	.10604	.13050	.10390	.07073	-.12110	.19680
2.000	-6.320	-.12700	.12244	.13490	.10660	.05255	-.08890	.14330
2.000	-4.230	-.13500	.13177	.13550	.10750	.03399	-.05520	.09060
2.000	-.050	-.13900	.13851	.12290	.10650	-.00163	.00690	-.00860
2.000	4.130	-.12500	.12691	.13420	.10650	-.03739	.06790	-.10640
2.000	6.210	-.11200	.11453	.13350	.10540	-.05590	.10110	-.15890
2.000	8.310	-.09600	.09878	.12870	.10250	-.07448	.13430	-.21320
GRADIENT		.00120	-.00158	-.00016	-.00012	-.00854	.01472	-.02356

DATE 05 OCT 73   TABULATED SOURCE FORCE DATA-IA9B

(DBO011)   (04 OCT 73)

AMES 97-707 IA9 O2A + S3 + T9 ORBITER

PARAMETRIC DATA

REFERENCE DATA

SREF =	2.4210 SQ.FT.	XMRP =	28.5300 IN.
LREF =	39.8490 IN.	YMRP =	.0000 IN.
BREF =	39.8490 IN.	ZMRP =	.0000 IN.
SCALE =	.0030 SCALE		

ALPHA =	-8.000
RUDDER =	-15.000
RUDFLR =	.000

ORBINC =	.500
ELEVON =	.000

RUN NO. 361/ 0   RN/L =   2.81   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
1.555	-8.480	-.17700	.15844	.13200	.09540	.06678	-.10620	.17580
1.555	-6.390	-.19200	.17117	.13270	.09630	.04719	-.07140	.12570
1.555	-4.280	-.20700	.16300	.13410	.09680	.03265	-.05240	.06930
1.555	-.080	-.21900	.19624	.14120	.10060	-.00850	.02170	-.02160
1.555	-.080	-.22000	.17984	.13490	.09891	-.04963	.09460	-.12970
1.555	4.120	-.18300	.16755	.13610	.09970	-.06358	.11270	-.16500
1.555	6.220	-.16800	.15509	.13530	.09830	-.08253	.14490	-.21340
1.555	8.320	-.16800	.15509	.13530	.09830	-.08253	.14490	-.21340
GRADIENT		.00063	-.00038	.00010	.00025	-.00980	.01750	-.02607

RUN NO. 367/ 0   RN/L =   2.32   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
2.000	-8.420	-.11600	.11174	.13100	.10390	.06560	-.11030	.18590
2.000	-6.340	-.13300	.12833	.13640	.10810	.04725	-.07610	.13210
2.000	-4.250	-.14300	.13917	.13820	.10980	.02833	-.04180	.07880
2.000	-.080	-.14600	.14568	.13700	.11060	-.00705	.02030	-.01910
2.000	-.080	-.13600	.13759	.13930	.11180	-.04334	.08180	-.11700
2.000	4.100	-.12300	.12527	.13870	.11020	-.06159	.11410	-.16850
2.000	6.190	-.10800	.11002	.13410	.10730	-.07983	.14630	-.22190
2.000	8.290	-.10800	.11002	.13410	.10730	-.07983	.14630	-.22190
GRADIENT		.00084	-.00019	.00013	.00024	-.00858	.01480	-.02345

DATE 03 OCT 73   TABULATED SOURCE FORCE DATA-IA9B

(B0012)   (14 OCT 73)

AMES 97-707 IA9 O2A + S3 + T9 ORBITER

PARAMETRIC DATA

REFERENCE DATA

SREF = 2.4210 SQ.FT.	XMRP = 28.5300 IN.	ALPHA =	-4.000	ORBINC =	.000
LREF = 39.8400 IN.	YMRP = .0000 IN.	RUDDER =	-15.000	ELEVON =	.000
BREF = 39.8400 IN.	ZMRP = .0000 IN.	RUDFLR =	.000		
SCALE = .0300 SCALE					

RUN NO. 362/ 0   RN/L = 2.80   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
1.555	-8.390	-.03990	.04855	.13090	.09200	.06025	-.09110	.15410
1.555	-6.330	-.04820	.05889	.13120	.09290	.04194	-.05720	.10620
1.555	-4.240	-.05890	.06549	.13190	.09290	.02919	-.04240	.07670
1.555	-.060	-.07600	.08362	.13790	.09690	-.00667	.01740	-.01570
1.555	4.110	-.05290	.06276	.13350	.09590	-.04273	.07710	-.10810
1.555	6.200	-.03920	.05533	.13540	.09730	-.05643	.09440	-.14590
1.555	8.270	-.02920	.04699	.13456	.09620	-.07481	.12560	-.18670
1.555	GRADIENT	.00072	-.00032	.00019	.00035	-.00861	.01431	-.02213

RUN NO. 368/ 0   RN/L = 2.31   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
2.000	-8.350	-.01700	.03306	.12370	.09550	.06172	-.10170	.17170
2.000	-6.270	-.03600	.05136	.12790	.09820	.04455	-.06940	.12090
2.000	-4.200	-.04920	.06420	.12960	.09990	.02697	-.03820	.07290
2.000	-.060	-.05600	.07228	.12890	.09980	-.00669	.01900	-.01810
2.000	4.090	-.04900	.06715	.13035	.10090	-.04169	.07630	-.10990
2.000	6.160	-.03300	.05265	.12840	.09930	-.05848	.10770	-.15960
2.000	8.295	-.01300	.03329	.12530	.09730	-.07535	.13620	-.20770
2.000	GRADIENT	.00000	.00036	.00058	.00012	-.00828	.01361	-.02169

DATE 03 OCT 73   TABULATED SOURCE FORCE DATA-IA98

AMES 97-707 IA9 O2A + S3 + T9 ORBITER   (OEP713) (24 CT 73)

REFERENCE DATA   PARAMETRIC DATA

SREF = 2.4210 SQ.FT.   XMRP = 28.5300 IN.   ALPHA = .000   ORBINC = .500
LREF = 39.8400 IN.   YMRP = .0000 IN.   RUDDER = -15.000   ELEVON = .000
BREF = 39.8400 IN.   ZMRP = .0000 IN.   RUDFLR = .000
SCALE = .0390 SCALE

RUN NO. 363/ 0   RN/L = 2.60   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
1.555	-8.340	.12200	-.07200	.13270	.09130	.05522	-.07630	.13200
1.555	-6.290	.11900	-.06434	.13410	.09320	.03679	-.04270	.08560
1.555	-4.210	.10800	-.06092	.13280	.09250	.02453	-.02940	.05990
1.555	-.040	.09300	-.04534	.13590	.09550	-.00655	.01570	-.01370
1.555	4.120	.11900	-.06276	.13460	.09540	-.03761	.06060	-.08760
1.555	6.200	.11900	-.06631	.13620	.09640	-.05971	.07630	-.11650
1.555	8.270	.12600	-.07204	.13640	.09550	-.06944	.09940	-.16390
1.555	GRADIENT	.00060	-.00022	.00022	.00035	-.00746	.01090	-.01766

RUN NO. 369/ 0   RN/L = 2.30   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
2.000	-8.320	.10200	-.06125	.11890	.08890	.05694	-.09270	.15790
2.000	-6.240	.07500	-.03690	.12220	.09140	.04127	-.06410	.11210
2.000	-4.110	.06500	-.02674	.12390	.09280	.02376	-.03440	.07540
2.000	-.030	.05500	-.01604	.12290	.09320	-.00786	.01940	-.01950
2.000	4.100	.06500	-.02491	.12310	.09290	-.03860	.07110	-.10220
2.000	6.180	.07700	-.03607	.12100	.09230	-.05527	.08990	-.14720
2.000	8.260	.10300	-.05916	.11930	.09140	-.06990	.12490	-.19130
2.000	GRADIENT	-.00000	.00022	-.00010	.00001	-.00734	.01276	-.02027

DATE 05 OCT 73   TABULATED SOURCE FORCE DATA-IA98

(090814)   (24 OCT 73)

AMES 97-797 IA9 O2A + S3 + 19 ORBITER

PARAMETRIC DATA

REFERENCE DATA

SREF =	2.4210 SQ.FT.	XMRF = 28.5595 IN.
LREF =	39.8495 IN.	YMRF = .0000 IN.
BREF =	39.3495 IN.	ZMRF = .0000 IN.
SCALE =	.0300 SCALE	

ALPHA = 4.000   ORBINC = .500
RUDTER = -15.000 ELEVON = .000
RUD-LR = .000

RUN NO. 364/ 0   RN/L = 2.79   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
1.555	-8.310	.28200	-.19962	.13330	.08940	.04941	-.06410	.11390
1.555	-6.260	.27100	-.18112	.13590	.09210	.03287	-.03180	.06830
1.555	-4.190	.26600	-.17711	.13490	.09290	.01987	-.01570	.04225
1.555	-.020	.24900	-.16007	.13430	.09520	-.00543	.01320	-.01170
1.555	4.120	.26700	-.17617	.13630	.09520	-.03222	.04640	-.06890
1.555	4.120	.27000	-.17759	.13660	.09555	-.04569	.06410	-.09915
1.555	6.200	.27000	-.17759	.13520	.09370	-.06266	.09590	-.14370
1.555	8.260	.27400	-.18081	.13520	.00025	-.06627	.05747	-.01345
	GRADIENT	.00012	.00012	.00017				

RUN NO. 375/ 0   RN/L = 2.32   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
2.000	-8.290	.21700	-.14879	.11520	.08450	.05168	-.08090	.14050
2.000	-.220	.19400	-.12706	.11910	.08770	.03777	-.05800	.09940
2.000	-4.190	.18600	-.11944	.12150	.08970	.02128	-.02940	.05705
2.000	-.030	.18390	-.11474	.12090	.09010	-.00682	.01640	-.01359
2.000	-.030	.18600	-.11862	.12090	.08900	-.03903	.06210	-.08960
2.000	4.110	.19400	-.12654	.12090	.08720	-.05587	.08760	-.13100
2.000	6.180	.19400	-.12654	.11770	.08510	-.06408	.09900	-.17000
2.000	8.270	.21700	-.14724	.11720	-.00028	-.05682	.05108	-.01775
	GRADIENT	.00200	.00017	-.00017				

DATE 05 OCT 73   TABULATED SOURCE FORCE DATA-IA98

(GBX015)   (04 OCT 73)

AMES 97-707 IA9 O2A + S3 + T9 ORBITER

REFERENCE DATA

		PARAMETRIC DATA	
SREF = 2.4210 SQ.FT.	XMRP = 28.5500 IN.	ALPHA = 6.000	ORBINC = .500
LREF = 39.8400 IN.	YMRP = .0000 IN.	RUDDER = -15.000	ELEVON = .000
BREF = 39.8400 IN.	ZMRP = .0000 IN.	RUDFLR = .000	
SCALE = .0300 SCALE			

RUN NO. 365/ 0   RNVL = 2.60   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
1.555	-8.330	.34900	-.23551	.13280	.08650	.04662	-.06010	.10730
1.555	-6.270	.33599	-.22708	.13490	.09110	.03057	-.02840	.06390
1.555	-4.200	.33900	-.22889	.13450	.09220	.01816	-.01325	.03840
1.555	-.010	.32900	-.21323	.13390	.09400	-.00544	.01450	-.01290
1.555	4.140	.33700	-.22500	.13470	.09410	-.03053	.04350	-.06530
1.555	6.230	.33500	-.22358	.13560	.09380	-.04395	.06130	-.09470
1.555	8.290	.34100	-.22886	.13610	.09270	-.0597	.09170	-.13720
GRADIENT		-.00025	.00047	.00002	.00023	-.00385	.00677	-.01243

RUN NO. 371/ 0   RNVL = 2.31   GRADIENT INTERVAL = -5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
2.000	-6.230	.25300	-.17232	.11890	.08650	.03622	.00240	.09190
2.000	-4.150	.24700	-.16613	.12020	.08820	.02079	.00290	.05240
2.000	-.020	.24900	-.16525	.11980	.08990	-.00651	.00	-.01470
2.000	4.130	.24400	-.16325	.11990	.08920	-.03377		-.06280
2.000	6.200	.24700	-.16707	.11720	.08690	-.04910	.06140	-.12340
2.000	8.290	.26800	-.18639	.1156	.08410	-.06092	.15130	-.1582
GRADIENT		-.00036	.00035	-.00004	.00004	-.00659	.0	-.0

DATE 03 OCT 73   TABULATED SOURCE FORCE DATA-IA98

AMES 97-707 IA9 O2A + S3 + T9 ORBITER

REFERENCE DATA

SREF =	2.4210 SQ.FT.	XMRP =	28.5300 IN.
LREF =	39.8490 IN.	YMRP =	.0000 IN.
BREF =	39.8490 IN.	ZMRP =	.0000 IN.
SCALE =	.0300 SCALE		

PARAMETRIC DATA

ALPHA =	8.000	ORBINC =	.500
RUDDER =	-15.000	ELEVON =	.000
RUDFLR =	.000		

RUN NO. 366/ 0 RNVL = 2.80 GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
1.555	-8.350	.40600	-.27792	.13160	.08710	.04504	-.05630	.10120
1.555	-6.270	.39900	-.27241	.13370	.09020	.02856	-.02490	.05810
1.555	-4.190	.39700	-.27043	.13360	.09130	.01647	-.00860	.03190
1.555	-.010	.38600	-.25869	.13180	.09220	-.00532	.01410	-.01280
1.555	4.160	.39500	-.26685	.13350	.09200	-.02890	.03900	-.05940
1.555	6.250	.39400	-.26712	.13460	.09210	-.04193	.05790	-.08920
1.555	8.330	.40000	-.27228	.13480	.09070	-.05814	.08740	-.13090
GRADIENT		-.00024	.00043	-.00004	.00008	-.00536	.00572	-.01093

RUN NO. 372/ 0 RNVL = 2.31 GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
2.000	-8.330	.32100	-.22916	.11290	.07730	.04798	-.07080	.12410
2.000	-6.240	.30400	-.21078	.11680	.08530	.03409	-.04640	.08490
2.000	-4.160	.30100	-.20623	.12020	.08820	.01947	-.02330	.04770
2.000	-.010	.30200	-.21469	.12190	.09030	-.00715	.01650	-.01600
2.000	4.150	.29900	-.21496	.11970	.08730	-.03279	.05500	-.07940
2.000	6.230	.29900	-.20697	.11470	.08420	-.04730	.07670	-.11570
2.000	8.330	.31400	-.22259	.11300	.08140	-.05882	.09490	-.15010
GRADIENT		-.00024	.00015	-.00006	-.00011	-.00629	.00942	-.01929

DATE 03 OCT 73   TABULATED SOURCE FORCE DATA-1A9B

(BO017) (04 OCT 73)

AMES 97-707 1A9 O2A + S3 + T9 ORBITER

REFERENCE DATA

SREF = 2.6210 SQ.FT.	XMRP =	28.5300 IN.
LREF = 39.0490 IN.	YMRP =	.0000 IN.
BREF = 39.0490 IN.	ZMRP =	.0000 IN.
SCALE = .0300 SCALE		

PARAMETRIC DATA

ALPHA =	-8.000	ORBINC =	.900
RUDDER =	-10.000	ELEVON =	.000
RUDFLR =	.000		

RUN NO. 373/ 0 RNVL = 2.60 GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
1.555	-8.460	-.17000	.15256	.12790	.09320	.06940	-.11160	.16090
1.555	-6.390	-.18500	.16537	.12850	.09400	.05055	-.07890	.13250
1.555	-4.260	-.19400	.17198	.13040	.09440	.03634	-.06050	.09810
1.555	-.060	-.20900	.18746	.13580	.09860	-.00372	.01120	-.00970
1.555	4.110	-.19400	.17490	.13130	.09680	-.04377	.08220	-.11520
1.555	6.220	-.18200	.16591	.13150	.09760	-.05758	.09980	-.14920
1.555	8.310	-.16900	.15519	.13060	.09600	-.07699	.13160	-.19780
GRADIENT		-.02000	.00035	.00011	.00029	-.00955	.01701	-.02542

RUN NO. 379/ 0 RNVL = 2.31 GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
2.000	-8.410	-.11100	.10707	.12810	.10210	.06428	-.10940	.18120
2.000	-6.320	-.12700	.12413	.13320	.10580	.04651	-.07790	.13000
2.000	-4.230	-.13600	.13412	.13410	.10690	.02892	-.04670	.08070
2.000	-.060	-.13800	.13970	.13390	.10760	-.00504	.01290	-.01290
2.000	4.110	-.12900	.13193	.13560	.10850	-.03985	.07260	-.10740
2.000	6.190	-.11800	.12183	.13550	.10810	-.05838	.10610	-.16000
2.000	8.290	-.10200	.10537	.13130	.10480	-.07607	.13780	-.21240
GRADIENT		.00024	-.00026	.00018	.00019	-.00825	.01430	-.02255

DATE 03 OCT 73   TABULATED SOURCE FORCE DATA-1A98

(B6C018)   (14 OCT 73)

AMES 97-707 1A9 O2A + S3 + T9 ORBITER

PARAMETRIC DATA

REFERENCE DATA

SREF = 2.4210 SQ.FT.   XMRP = 28.5390 IN.
LREF = 39.8490 IN.   YMRP = .0000 IN.
BREF = 39.8490 IN.   ZMRP = .0000 IN.
SCALE = .0300 SCALE

ALPHA = -4.000   ORBINC = .500
RUDDER = -10.000 ELEVON = .000
RUDFLR = .000

RUN NO. 374/ 0   RN/L = 2.60   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
1.555	-8.380	-.03400	.04651	.12760	.08990	.06222	-.09370	.15590
1.555	-6.310	-.04590	.05486	.12830	.09050	.04435	-.06200	.11090
1.555	-4.220	-.04900	.05774	.12860	.09040	.03090	-.04730	.08100
1.555	-.060	-.06300	.07230	.13300	.09450	-.00396	.01080	-.00910
1.555	4.110	-.04900	.05979	.13030	.09370	-.03926	.07020	-.10090
1.555	6.200	-.04000	.05535	.13180	.09470	-.05254	.08560	-.13130
1.555	8.280	-.03100	.04792	.13060	.09380	-.07092	.11630	-.17710
GRADIENT		.00000	.00025	.00020	.00040	-.00842	.01411	-.02179

RUN NO. 380/ 0   RN/L = 2.30   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
2.000	-8.330	-.01320	.02986	.12090	.09320	.06066	-.10160	.16800
2.000	-6.250	-.03200	.04859	.12480	.09560	.04313	-.07370	.12200
2.000	-4.180	-.04200	.05895	.12620	.09740	.02881	-.04470	.07640
2.000	-.050	-.04900	.06664	.12680	.09810	-.00376	.01040	-.00950
2.000	4.090	-.04300	.06247	.12830	.09900	-.03847	.06940	-.10170
2.000	6.170	-.02900	.04948	.12650	.09790	-.05664	.10130	-.15290
2.000	8.250	-.01600	.02758	.12240	.09480	-.07223	.12990	-.20030
GRADIENT		-.00012	.00042	.00025	.00019	-.00814	.01380	-.02154

TABULATED SOURCE FORCE DATA-1A9B

(BB0019)   (04 OCT 73)

AMES 97-707 1A9 O2A + S3 + T9 ORBITER

PARAMETRIC DATA

REFERENCE DATA

SREF =	2.4210 SQ.FT.	XMRP =	28.5300 IN.
LREF =	39.8490 IN.	YMRP =	.0000 IN.
BREF =	39.8490 IN.	ZMRP =	.0000 IN.
SCALE =	.0300 SCALE		

ALPHA =	.000	ORBINC =	.900
RUDDER =	-10.000	ELEVON =	.000
RUDFLR =	.000		

RUN NO. 375/ 0   RN/L = 2.79   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
1.555	-8.350	.12600	-.07545	.12970	.08930	.05760	-.08110	.13690
1.555	-6.280	.11600	-.06778	.13060	.09199	.03922	-.04780	.09110
1.555	-4.200	.11200	-.06503	.13110	.09150	.02715	-.03440	.06500
1.555	-.040	.09990	-.05101	.13190	.09330	-.00396	.01030	-.00870
1.555	4.120	.11500	-.06536	.13090	.09310	-.03466	.05470	-.08200
1.555	6.210	.11800	-.06658	.13170	.09380	-.04738	.06820	-.10830
1.555	8.280	.12700	-.07371	.13190	.09290	-.06606	.10070	-.15450
GRADIENT		.00036	-.00004	-.00002	.00022	-.00743	.01071	-.01767

RUN NO. 381/ 0   RN/L = 2.31   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
2.000	-8.320	.10800	-.06489	.11640	.08760	.05793	-.09480	.15980
2.000	-6.240	.08200	-.04184	.11980	.08970	.04221	-.06680	.11420
2.000	-4.170	.07000	-.03015	.12160	.09120	.02526	-.03830	.06990
2.000	-.030	.06100	-.02178	.12080	.09110	-.00563	.01430	-.01440
2.000	4.100	.07200	-.03033	.12070	.09090	-.03581	.06490	-.09570
2.000	6.180	.08400	-.04121	.11920	.09020	-.05274	.09350	-.14130
2.000	8.260	.11000	-.06458	.11800	.08840	-.06717	.11860	-.18500
GRADIENT		.00024	-.00002	-.00011	-.00004	-.00739	.01248	-.01990

No

DATE 03 OCT 73   TABULATED SOURCE FORCE DATA-1A9B

(B00020)   (04 OCT 73)

AMES 97-707 IA9 C2A + S3 + T9 ORBITER

PARAMETRIC DATA

REFERENCE DATA

SREF = 2.4210 SQ.FT.   XMRP = 28.3300 IN.   ALPHA =   4.000   ORBINC =   .500
LREF = 39.8490 IN.   YMRP =   .0000 IN.   RUDDER = -10.000   ELEVON =   .000
BREF = 39.8490 IN.   ZMRP =   .0000 IN.   RUDFLR =   .000
SCALE =   .0300 SCALE

RUN NO. 376/ 0 RN/L = 2.60   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
1.555	-8.320	.28100	-.19051	.12990	.08790	.05188	-.06940	.11910
1.555	-6.260	.27300	-.18276	.13230	.09080	.03515	-.03790	.07340
1.555	-4.180	.27100	-.18181	.13220	.09100	.02216	-.02050	.04790
1.555	-.020	.25800	-.16899	.13080	.09300	-.00298	.00750	-.00500
1.555	4.140	.27300	-.18344	.13250	.09280	-.02888	.03950	-.06200
1.555	6.210	.27800	-.18476	.13260	.09270	-.04201	.05560	-.08990
1.555	8.300	.28400	-.19025	.13330	.09120	-.05957	.08480	-.13640
1.555	GRADIENT	.00046	-.06920	.00004	.00022	-.00613	.00721	-.01314

RUN NO. 362/ 0 RN/L = 2.33   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
2.000	-8.290	.22100	-.15108	.11410	.08340	.05231	-.08200	.14120
2.000	-6.220	.19600	-.16925	.11750	.08660	.03820	-.05700	.09990
2.000	-4.150	.19000	-.12180	.11990	.08870	.02206	-.03100	.05810
2.000	-.020	.18820	-.11828	.11880	.08840	-.00540	.01310	-.01310
2.000	4.110	.19200	-.12284	.11850	.08700	-.03289	.05740	-.08520
2.000	6.190	.20100	-.13174	.11540	.08510	-.04852	.08250	-.12620
2.000	8.270	.22600	-.15385	.11520	.08350	-.06171	.10400	-.16510
2.000	GRADIENT	.00024	-.07015	-.00017	-.00021	-.00665	.01070	-.01735

DATE 03 OCT 73   TABULATED SOURCE FORCE DATA-IA9B

AMES 97-707 IA9 O2A + S3 + T9 ORBITER

(BBOO21)   (04 OCT 73)

PARAMETRIC DATA

REFERENCE DATA

SREF =	2.4210 SQ.FT.	XMRP =	28.5300 IN.
LREF =	39.0450 IN.	YMRP =	.0000 IN.
BREF =	39.0450 IN.	ZMRP =	.0000 IN.
SCALE =	.0100 SCALE		

ALPHA =   6.000   ORBINC =   .900
RUDDER = -10.000   ELEVON =   .000
RUDFLR =   .000

RUN NO. 377/ 0   RN/L = 2.80   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
1.555	-8.340	.34800	-.23709	.13010	.08680	.04978	-.06610	.11410
1.555	-6.280	.33900	-.22989	.13250	.08990	.03282	-.03330	.06950
1.555	-4.190	.34300	-.23328	.13260	.09110	.02057	-.01790	.04270
1.555	-.010	.32800	-.21875	.1304C	.09200	-.00256	.00860	-.00680
1.555		.34800	-.23512	.13190	.09170	-.02646	.03630	-.05770
1.555	4.190	.34400	-.23182	.13320	.09210	-.03970	.05360	-.08640
1.555	6.240	.34800	-.23501	.13340	.09060	-.05671	.08490	-.13040
1.555	8.330					-.00564	.00645	-.01204
GRADIENT		.00060	-.00022	-.00008	.00017			

RUN NO. 383/ 0   RN/L = 2.51   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
2.000	-8.310	.27100	-.18964	.11280	.08200	.04987	-.07340	.13180
2.000	-6.220	.25300	-.17228	.11710	.08530	.03626	-.05200	.09240
2.000	-4.190	.24900	-.16674	.11910	.08740	.02059	-.02720	.05240
2.000	-.010	.25300	-.16776	.11780	.08730	-.00596	.01390	-.01450
2.000		.25100	-.16805	.11780	.08580	-.03248	.05470	-.08130
2.000	4.130	.25500	-.17292	.11490	.08360	-.04722	.07860	-.12040
2.000	6.210	.25500	-.19390	.11320	.08100	-.05863	.09630	-.15440
2.000	8.300	.27700				-.00641	.00989	-.01615
GRADIENT		.00024	-.00016	-.00016	-.00019			

DATE 05 OCT 73   TABULATED SOURCE FORCE DATA-1A9B

(IH0022) (24 OCT 73)

AMES 97-707 IA9 OZA + S3 + T9 ORBITER

REFERENCE DATA

SREF =	2.4210 SQ.FT.	XMRF =	28.5300 IN.	
LREF =	39.8490 IN.	YMRF =	.0000 IN.	
BREF =	39.8490 IN.	ZMRF =	.0000 IN.	
SCALE =	.0300 SCALE			

PARAMETRIC DATA

ALPHA =	8.000 ORBINC = .900
RUDDER =	-10.000 ELEVON = .000
RUDFLR =	.000

RUN NO. 378/ 0   RNVL = 2.80   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
1.555	-8.360	.41000	-.28055	.12990	.08580	.04783	-.06250	.10810
1.555	-6.290	.40600	-.27745	.13200	.08690	.03090	-.03070	.06440
1.555	-4.160	.40600	-.27669	.13180	.08990	.01877	-.01430	.03770
1.555	-.010	.39600	-.26631	.12990	.09100	-.00192	.00700	-.00510
1.555	4.100	.40300	-.27298	.13190	.09070	-.02470	.03120	-.05090
1.555	6.250	.40600	-.27584	.13290	.09090	-.03733	.04880	-.07920
1.555	8.360	.40900	-.27872	.13280	.08900	-.05376	.07920	-.12210
GRADIENT		-.00037	.00048	-.00004	.00010	-.00525	.00549	-.01070

RUN NO. 384/ 0   RNVL = 2.31   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
2.000	-8.320	.31900	-.22577	.11120	.08110	.04810	-.07030	.12380
2.000	-6.240	.30300	-.21007	.11570	.08420	.03431	-.04650	.08450
2.000	-4.150	.30400	-.20867	.11860	.08650	.01949	-.02410	.04740
2.000	.000	.31800	-.20941	.11920	.08790	-.00600	.01330	-.01390
2.000	4.160	.30400	-.20911	.11770	.08560	-.03088	.05070	-.07550
2.000	6.240	.30600	-.21284	.11310	.08200	-.04539	.07310	-.11260
2.000	8.330	.32200	-.22859	.11150	.07990	-.05674	.09110	-.14670
GRADIENT		-.00000	-.00005	-.00011	-.00011	-.02696	.00900	-.01470

DATE 03 OCT 73

TABULATED SOURCE FORCE DATA-1A9B

(BBOO23) (04 OCT 73)

AMES 97-707 IA9 O2A + S3 + T9 ORBITER

PARAMETRIC DATA

ALPHA = -8.000	ORBINC = .500
RUDDER = 15.000	ELEVON = .000
RUDFLR = .000	

REFERENCE DATA

SREF =	2.4210 SQ.FT.	XMRP = 28.5591 IN.
LREF =	39.8490 IN.	YMRP = .0000 IN.
BREF =	39.8490 IN.	ZMRP = .0000 IN.
SCALE =	.0300 SCALE	

RUN NO. 365/ 0   RNVL = 2.80   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
1.555	-8.430	-.17900	.15600	.13260	.09680	.08288	-.14290	.21090
1.555	-6.350	-.18700	.16788	.13330	.09750	.06467	-.11100	.16340
1.555	-4.240	-.20300	.18123	.13490	.09730	.09079	-.09260	.12890
1.555	-.030	-.21200	.19161	.14090	.10070	.00995	-.01990	.01870
1.555	4.190	-.19700	.17670	.13320	.09720	-.03136	.05360	-.09910
1.555	6.390	-.16800	.15426	.13180	.09590	-.06445	.10520	-.17260
1.555	8.390			-.00020	-.00001	-.09979	.01745	-.02680
	GRADIENT	.00071	-.00054					

RUN NO. 391/ 0   RNVL = 2.31   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
2.000	-8.350	-.11600	.11238	.13200	.10520	.07633	-.13670	.20800
2.000	-6.300	-.13100	.12901	.13740	.10880	.05950	-.10690	.15890
2.000	-4.210	-.13900	.13855	.13790	.11050	.04214	-.07620	.10970
2.000	-.040	-.14100	.14264	.13660	.10970	.00743	-.01490	.01490
2.000	4.130	-.13300	.13514	.13760	.10970	-.02799	.04720	-.08290
2.000	6.210	-.12100	.12426	.13680	.10860	-.04704	.08140	-.13670
2.000	8.310	-.10900	.10672	.13170	.10420	-.06685	.11700	-.19380
	GRADIENT	.00072	-.00041	-.00024	-.00010	-.00841	.01480	-.02309

CATE 05 OCT 73   TABULATED SOURCE FORCE DATA-1A9B

(B9002A)   (24 OCT 73)

AMES 97-757 IA9 O2A + S3 + T9 ORBITER

PARAMETRIC DATA

REFERENCE DATA

SREF =	2.4210 SQ.FT.	XMRP = 28.5300 IN.
LREF =	39.8490 IN.	YMRP = .0000 IN.
BREF =	39.8490 IN.	ZMRP = .0000 IN.
SCALE =	.0305 SCALE	

ALPHA = -4.000   ORBINC = .500
RUDDER = 15.000   ELEVON = .000
RUDFLR = .000

RUN NO. 386/ 0   RN/L = 2.80   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
1.555	-8.340	-.03290	.04707	.13290	.09400	.07309	-.12440	.18310
1.555	-6.270	-.04400	.05632	.13290	.09420	.05755	-.09900	.13980
1.555	-4.180	-.05300	.06171	.13180	.09300	.04472	-.07800	.11000
1.555	-.010	-.06600	.07542	.13700	.09650	.00976	-.01980	.01950
1.555	4.140	-.05300	.06278	.13220	.09480	-.02591	.03950	-.07140
1.555	6.230	-.04200	.05614	.13290	.09540	-.03862	.05420	-.10150
1.555	8.310	-.03100	.04742	.13160	.09420	-.05804	.08700	-.14940
GRADIENT		-.00000	.00013	.00005	.00022	-.00849	.01412	-.02180

RUN NO. 392/ 0   RN/L = 2.31   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
2.000	-8.310	-.01800	.03562	.12400	.09650	.07112	-.12510	.19960
2.000	-6.230	-.03300	.05292	.12810	.09880	.05592	-.09770	.14510
2.000	-4.160	-.04700	.06390	.12910	.09950	.03929	-.06900	.09910
2.000	-.020	-.04900	.06815	.12830	.09930	.00654	-.01360	.01290
2.000	4.110	-.04500	.06410	.12910	.09950	-.02757	.04420	-.07740
2.000	6.190	-.03200	.05181	.12770	.09840	-.04568	.07630	-.12760
2.000	8.270	-.00900	.02996	.12330	.09510	-.06299	.13830	-.17950
GRADIENT		.00024	.00002	-.00020	-.00000	-.00808	.01369	-.02134

DATE 05 OCT 73   TABULATED SOURCE FORCE DATA-IA98

(BB0025) (04 OCT 73)

AMES 97-707 IA9 O2A + S3 + T9 ORBITER

PARAMETRIC DATA

ALPHA =	.000	ORBINC = .500
RUDDER =	15.000	ELEVON = .000
RUDFLR =	.000	

REFERENCE DATA

SREF =	2.4210 SQ.FT.	XMRP = 28.5330 IN.
LREF =	39.8490 IN.	YMRP = .0000 IN.
BREF =	39.8490 IN.	ZMRP = .0000 IN.
SCALE =	.0350 SCALE	

RUN NO. 387/ 0   RN/L = 2.80   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
1.555	-8.320	.12300	-.07146	.13460	.09310	.07053	-.11090	.16460
1.555	-6.290	.11300	-.06358	.13380	.09420	.05295	-.07720	.11890
1.555	-4.180	.10600	-.05883	.13340	.09360	.04039	-.06380	.09290
1.555	.000	.09600	-.04857	.13460	.09900	.00890	-.01860	.01850
1.555	4.160	.11000	-.06218	.13380	.09420	-.02201	.02590	-.05480
1.555	6.290	.11570	-.06417	.13510	.09590	-.03479	.04020	-.08210
1.555	8.310	.12200	-.07091	.13320	.09330	-.05395	.07360	-.12990
1.555	GRADIENT	.00048	-.00040	.00005	.00007	-.00748	.01076	-.01771

RUN NO. 393/ 0   RN/L = 2.32   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
2.000	-8.290	.10100	-.05839	.11850	.08990	.06486	-.11270	.17340
2.000	-6.220	.07700	-.03665	.12090	.09160	.05970	-.08880	.13230
2.000	-4.140	.06800	-.02785	.12210	.09200	.03483	-.06230	.08960
2.000	-.010	.06300	-.02128	.12150	.09150	.00517	-.01140	.00990
2.000	4.150	.07300	-.03286	.11900	.08810	-.03221	.05280	-.08990
2.000	8.270	.15700	-.06318	.11780	.08540	-.05854	.09940	-.16560
2.000	GRADIENT	.00061	-.00061	-.00037	-.00047	-.00809	.01389	-.02166

DATE 05 OCT 73

TABULATED SOURCE FORCE DATA-1A9B

(06002X) (04 OCT 73)

AMES 97-707 IA9 02A + S3 + T9 ORBITER

REFERENCE DATA

				PARAMETRIC DATA	
SREF =	2.4210 SQ.FT.	YMRP =	28.5300 IN.	ALPHA =	4.000	ORBINC =	.500
LREF =	39.8490 IN.	YMRP =	.0000 IN.	RUDER =	15.000	ELEVON =	.000
BREF =	39.8490 IN.	ZMRP =	.0000 IN.	RUDFLR =	.000		
SCALE =	.0300 SCALE						

RUN NO. 388/ 0   RNVL = 2.80   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
1.555	-8.290	.27705	-.18518	.13400	.09110	.05400	-.09720	.14540
1.555	-6.230	.26500	-.17544	.13440	.09520	.04789	-.06530	.10180
1.555	-4.150	.26300	-.17434	.13400	.09320	.03499	-.04910	.07440
1.555	.010	.25500	-.16355	.13320	.09470	.00944	-.01940	.02320
1.555	.010	.26900	-.17848	.13570	.09420	-.01711	.01200	-.03630
1.555	4.160	.27300	-.18053	.13620	.09450	-.03051	.02970	-.06560
1.555	6.240	.27900	-.18653	.13310	.09130	-.04789	.06270	-.11180
1.555	8.300	.27900	-.18653	.13310	.09512	-.00627	.00735	-.01332
GRADIENT		.00072	-.00050	.00020				

RUN NO. 394/ 0   RNVL = 2.31   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
2.000	-8.260	.21400	-.14478	.11580	.08570	.03908	-.09960	.15460
2.000	-6.180	.19900	-.12661	.11830	.08750	.04636	-.07785	.11670
2.000	-4.110	.18900	-.12050	.11970	.08870	.03132	-.05400	.07890
2.000	.010	.19000	-.11910	.11930	.08870	.00510	-.01190	.01940
2.000	.010	.19000	-.12161	.12030	.08750	-.02285	.03480	-.06190
2.000	4.130	.19700	-.12861	.11710	.08560	-.03919	.06170	-.10450
2.000	6.200	.19700	-.14982	.11590	.08360	-.05356	.08630	-.14640
2.000	8.280	.22300	-.14982	.11590	-.00015	-.00657	.01078	-.01698
GRADIENT		.00512	-.00013	.00007				

DATE 05 OCT 73   TABULATED SOURCE FORCE DATA-1A9B

AMES 97-757 1A9 O2A + S3 + T9 ORBITER

REFERENCE DATA

SREF =	2.4210 SQ.FT.	XMRP =
LREF =	39.0490 IN.	YMRP =
BREF =	39.0490 IN.	ZMRP =
SCALE =	.0500 SCALE	

PARAMETRIC DATA

XMRP =	28.5300 IN.	ALPHA =	6.000	ORBINC = .500
YMRP =	.0000 IN.	RUDDER =	15.000	ELEVON = .000
ZMRP =	.0000 IN.	RUDFLR =	.000	

RUN NO. 369/ 0   RN/L = 2.79   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
1.555	-8.310	.34900	-.23279	.13450	.05750	.06137	-.09320	.13950
1.555	-6.230	.33200	-.22315	.13500	.09200	.04571	-.06110	.09970
1.555	-4.160	.33500	-.22569	.13390	.09260	.03346	-.04310	.06890
1.555	.020	.32500	-.21526	.13310	.09350	.00894	-.01740	.01790
1.555	4.180	.33900	-.22772	.13440	.09290	-.01588	.01010	-.03310
1.555	6.260	.33900	-.22752	.13500	.09290	-.02900	.02790	-.06210
1.555	8.330	.34600	-.23391	.13300	.09060	-.04513	.05880	-.10540
GRADIENT		.00048	-.00024	.00006	-.00001	-.00592	.00662	-.01223

RUN NO. 395/ 0   RN/L = 2.51   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
2.000	-8.280	.26800	-.18590	.11400	.08370	.05665	-.09340	.14520
2.000	-6.200	.25200	-.17022	.11780	.08630	.04472	-.07310	.11000
2.000	-4.120	.24900	-.16609	.11910	.08760	.03020	-.09040	.07290
2.000	.010	.25500	-.16891	.11880	.08720	.00489	-.01090	.01000
2.000	4.140	.25000	-.16755	.11960	.08660	-.02242	.03260	-.03400
2.000	6.230	.25300	-.17229	.11650	.08490	-.03819	.05840	-.09910
2.000	8.310	.27300	-.19162	.11390	.08130	-.05107	.07970	-.13720
GRADIENT		.00012	-.00018	.00006	-.00012	-.00637	.01005	-.01588

AMES 97-707 IA9 O2A + S3 + T9 ORBITER

REFERENCE DATA

PARAMETRIC DATA

SREF =	2.4210 SQ.FT.	XMRP =
LREF =	39.0490 IN.	YMRP =
BREF =	39.0490 IN.	ZMRP =
SCALE =	.0300 SCALE	

28.5300 IN.
.0000 IN.
.0000 IN.

ALPHA = 8.000　ORBINC = .500
RUDDER = 15.000　ELEVON = .000
RUDFLR = .000

RUN NO. 399/ 0　RN/L = 2.80　GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
1.555	-8.330	.40400	-.27428	.13360	.08800	.05800	-.08770	.13150
1.555	-6.250	.39800	-.26966	.13400	.09040	.04331	-.05780	.08990
1.555	-4.160	.39600	-.26890	.13310	.09140	.03141	-.04110	.06035
1.555	.020	.39100	-.26219	.13170	.09220	.00912	-.01780	.01780
1.555	.020	.39700	-.26917	.13410	.09190	-.01418	.00630	-.02770
1.555	4.200	.40100	-.27263	.13440	.09130	-.02692	.02430	-.05560
1.555	6.280	.40400	-.27582	.13210	.08900	-.04276	.03430	-.09880
1.555	8.360	.40400	-.00003	.13210	.00700	-.05545	.00557	-.00999
GRADIENT		.00012		.00012				

RUN NO. 396/ 0　RN/L = 2.32　GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
2.000	-8.300	.31600	-.22256	.11240	.08230	.05497	-.08820	.13720
2.000	-6.200	.30300	-.20954	.11630	.08510	.04272	-.06780	.10230
2.000	-4.120	.30600	-.20999	.11840	.08680	.02925	-.04690	.06770
2.000	.020	.30900	-.21076	.12000	.08810	.00466	-.01080	.00950
2.000	.160	.30200	-.20818	.11910	.08570	-.02068	.02820	-.03200
2.000	6.200	.30300	-.21048	.11500	.08350	-.03599	.03270	-.09100
2.000	8.340	.31900	-.22686	.11240	.08090	-.04871	.07350	-.12810
2.000		-.00048	.00021	.00008	-.00013	-.00603	.00900	-.03445
GRADIENT		-.00048						

DATE 05 OCT 73   TABULATED SOURCE FORCE DATA-IA93

                        (B0G6G3) (54 OCT 73)

                        APES 97-707 IA9 O2A + S3 + .9 SRM BOOSTER

REFERENCE DATA   PARAMETRIC DATA

SREF = 2.4210 SQ.FT.   XREF = 28.5395 IN.   BETA   = .000   ORBINC = .000
LREF = 39.0490 IN.   YREF =   .0000 IN.   RUDDER = .000   ELEVON = .000
BREF = 39.0490 IN.   ZREF =   .0000 IN.   RUDFLR = .000
SCALE = .0300 SCALE

RUN NO. 341/ 0   RVL = 2.79   GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CLM	CA	CAF	CBL	CYN	CY
1.555	-8.650	-.07190	.01630	.07160	.03200	-.01290	.00823	-.04650
1.555	-6.520	-.05290	.01140	.07430	.03500	-.00931	-.00800	-.02560
1.555	-4.370	-.03700	.00930	.07590	.03710	-.00677	-.02369	.00770
1.555	-2.250	-.02590	.00800	.07720	.03820	-.00467	-.03600	.03910
1.555	-.140	-.01400	.00560	.07910	.04030	-.00266	-.00827	.03200
1.555	1.950	-.00400	.00220	.08020	.04100	-.00073	-.03640	.72220
1.555	4.030	.00900	-.00310	.08230	.04260	.00165	-.03303	.02220
1.555	6.110	.02000	-.00690	.08420	.04410	.00366	-.02787	.01270
1.555	8.200	.03300	-.01170	.08640	.04430	.00614	-.01733	-.00790
GRADIENT		.00538	-.00146	.00075	.00065	.00099	-.00090	.00128

RUN NO. 351/ 0   RVL = 2.27   GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CLM	CA	CAF	CBL	CYN	CY
2.000	-8.530	-.06400	.02780	.05790	.02300	-.01537	.02279	-.05420
2.000	-6.440	-.05900	.01750	.06000	.02560	-.01079	.00962	-.03270
2.000	-4.350	-.03880	.01000	.06170	.02770	-.00695	-.00687	-.00690
2.000	-2.270	-.02200	.00590	.06390	.03020	-.00402	-.01922	.01090
2.000	-.190	-.01200	.00390	.06670	.03290	-.00220	-.02673	.01920
2.000	1.880	-.00100	-.00040	.06890	.03440	-.00018	-.03569	.02220
2.000	3.940	.01100	-.00410	.07150	.03680	.00201	-.03023	.01920
2.000	6.030	.02300	-.00690	.07280	.03840	.00421	-.02562	.01120
2.000	8.120	.03900	-.01270	.07290	.03820	.00713	-.01249	-.01150
GRADIENT		.00574	-.00162	.00119	.00108	.00105	-.00281	.00356

DATE 05 OCT 73   TABULATED SOURCE FORCE DATA-1A98

(BBO102, (04 OCT 73)

AMES 97-707 1A9 O2A + S3 + T9 SRM BOOSTER

PARAMETRIC DATA

REFERENCE DATA

SREF = 2.3210 SQ.FT.	XMRP = 28.5300 IN.	
LREF = 39.8490 IN.	YMRP = .0000 IN.	
BREF = 39.8490 IN.	ZMRP = .0000 IN.	
SCALE = .0300 SCALE		

ALPHA =	8.000	ORBINC = .500
RUDDER =	.000	ELEVON = .000
RUDFLR =	.000	

RUN NO. 342/ 0   RN/L = 2.61   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
1.555	-6.980	.04200	-.01040	.09810	.04900	.00768	-.03036	.01710
1.555	-4.950	.03900	-.00890	.09450	.04580	.00713	-.02568	.00970
1.555	-2.900	.03500	-.00770	.08850	.04310	.00640	-.02208	.00350
1.555	5.270	.03200	-.01570	.08800	.04180	.00585	-.01375	-.01300
1.555	5.270	.03900	-.01520	.06380	.03660	.00549	-.00766	-.02100
1.555	7.290	.03500	-.01980	.08100	.03620	.00604	-.00752	-.02140
1.555	9.340							
GRADIENT		-.00195	.00059	-.00293	-.00132	-.00036	.00175	-.00392

RUN NO. 360/ 0   RN/L = 2.30   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
2.010	-8.170	.05000	-.01560	.08430	.04910	.00915	-.04126	.03230
2.000	-6.130	.04900	-.01660	.08160	.04640	.00896	-.03349	.02080
2.000	-4.080	.04500	-.01440	.07850	.04340	.00823	-.02554	.00780
2.000	4.110	.03400	-.01190	.06850	.03540	.00622	-.00698	-.02090
2.000	4.110	.03100	-.00980	.06690	.03560	.00567	-.00941	-.02020
2.000	6.190	.03700	-.01700	.06610	.03440	.00677	-.01159	-.01760
2.000	8.260							
GRADIENT		-.00134	.00035	-.00122	-.00098	-.00025	.00227	-.00350

TABULATED SOURCE FORCE DATA-IA98

(BBC103)   (04 OCT 73)

AMES 97-707 IA9 O2A + S3 + T9 SRM BOOSTER

PARAMETRIC DATA

ALPHA = 6.000	ORBINC = .900
RUDDER = .000	ELEVON = .000
RUDFLR = .000	

REFERENCE DATA

SREF = 2.4210 SQ.FT.	XMRP = 28.5300 IN.		
LREF = 39.0490 IN.	YMRP = .0000 IN.		
BREF = 39.0490 IN.	ZMRP = .0000 IN.		
SCALE = .0300 SCALE			

RUN NO. 343/ 0   RN/L = 2.60   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
1.555	-6.980	.01900	-.00120	.09540	.04820	.00348	-.03722	.03060
1.555	-4.920	.01800	-.00010	.09290	.04560	.00329	-.03334	.02480
1.555	-2.890	.01700	-.00110	.08680	.04310	.00311	-.03078	.02040
1.555		.02600	-.01990	.08720	.04240	.00476	-.02196	.00350
1.555	5.240	.02500	-.01610	.08190	.03880	.00457	-.01690	.00000
1.555	7.260	.02700	-.01950	.07970	.03650	.00494	-.01918	-.00170
1.555	9.300							
GRADIENT		-.00049	-.00049	-.00281	-.00123	-.00009	.00136	-.00217

RUN NO. 359/ 0   RN/L = 2.30   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
2.000	-8.140	.02600	-.00480	.08250	.04730	.00476	-.04695	.04900
2.000	-6.090	.02700	-.00700	.08010	.04460	.00494	-.04156	.03400
2.000	-4.050	.02600	-.00790	.07720	.04210	.00476	-.03560	.02510
2.000	4.090	.02700	-.01310	.06770	.03900	.00494	-.01510	-.00590
2.000	4.090	.02400	-.01100	.06640	.03590	.00439	-.01777	-.00530
2.000	6.170	.02800	-.01590	.06560	.03480	.00512	-.02047	-.00210
2.000	8.290							
GRADIENT		.00012	-.00064	-.00117	-.00067	.00002	.00252	-.00361

DATE 03 OCT 73   TABULATED SOURCE FORCE DATA-IA9B

(IBOID4) (04 OCT 73)

AMES 97-707 IA9 OA + S3 + T9 SRM BOOSTER

PARAMETRIC DATA

REFERENCE DATA

SREF =	2.4210 SQ.FT.	XMRP = 28.5330 IN.
LREF =	39.0490 IN.	YMRP = .0000 IN.
BREF =	39.0490 IN.	ZMRP = .0000 IN.
SCALE =	.0300 SCALE	

ALPHA =	4.000	ORBINC =	.500
RUDDER =	.000	ELEVON =	.000
RUDFLR =	.000		

RUN NO. 344/ 0 RVAL = 2.81 GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
1.555	-6.940	-.00600	.01170	.09290	.04790	-.00110	-.04055	.03870
1.555	-4.920	-.00290	.00920	.09970	.04510	-.00037	-.03785	.03410
1.555	-2.880	.00100	.00590	.08410	.04210	.00018	-.03560	.02970
1.555	5.220	.02090	-.01620	.08600	.04260	.00366	-.02503	.00900
1.555	5.220	.02200	-.01790	.08080	.03890	.00402	-.02432	.00710
1.555	7.250	.02400	-.02020	.07940	.03710	.00439	-.02729	.01090
1.555	9.290	.00147	-.00181	-.00289	-.00147	.00027	.00110	-.00216
GRADIENT								

RUN NO. 358/ 0 RVAL = 2.31 GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
2.000	-8.110	.00000	.00760	.08060	.04500	.00000	-.05123	.05090
2.000	-6.070	.00400	.00320	.07780	.04260	.00073	-.04589	.04180
2.000	-4.040	.00690	.00010	.07510	.04010	.00110	-.03974	.03500
2.000	4.080	.01700	-.01110	.06630	.03470	.00311	-.01965	.00180
2.000	6.150	.01600	-.01200	.06590	.03570	.00329	-.02463	.00490
2.000	8.200	.02400	-.01770	.06590	.03410	.00439	-.02564	.00580
2.000		.00135	-.00138	-.00108	-.00167	.00025	.00247	-.00384
GRADIENT								

DATE 05 OCT 73   TABULATED SOURCE FORCE DATA-1A98

(BBO1D5) (04 OCT 73)

AMES 97-7D7 1A9 O2A + S3 + T9 SRM BOOSTER

PARAMETRIC DATA

REFERENCE DATA

REF =	2.4210 SQ.FT.	XMRP =	26.5500 IN.
REF =	39.0490 IN.	YMRP =	.0000 IN.
REF =	39.0490 IN.	ZMRP =	.0000 IN.
SCALE =	.0350 SCALE		

ALPHA = 2.000 ORBINC = .500
RUDDER = .000 ELEVON = .000
RUDFLR = .000

RUN NO. 345/ 0   RN/L =   2.82   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
1.555	-6.960	-.02800	.02330	.08970	.04550	-.00512	-.04079	.04250
1.555	-4.930	-.02300	.01690	.08770	.04330	-.00421	-.03842	.03770
1.555	-2.910	-.01400	.01150	.08250	.04120	-.00256	-.03644	.03590
1.555	.200	.01500	-.01530	.08420	.04310	.00274	-.02628	.01130
1.555	5.200	.01500	-.01980	.08050	.03930	.00366	-.02669	.01060
1.555	7.240	.02000	-.02270	.07950	.03740	.00402	-.03034	.01370
1.555	9.500	.02200						
	GRADIENT	.00446	-.00366	-.00257	-.00104	.00082	.00098	-.00188

RUN NO. 357/ 0   RN/L =   2.31   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
2.000	-8.120	-.02100	.01700	.07760	.04270	-.00384	-.05031	.05100
2.000	-6.090	-.01500	.01140	.07600	.04040	-.00274	-.04579	.04440
2.000	-4.000	-.01000	.00710	.07340	.03890	-.00183	-.03995	.03640
2.000	4.070	.01100	-.01100	.06490	.03330	.00201	-.02249	.00780
2.000	6.140	.01500	-.01380	.06410	.03500	.00274	-.02650	.00880
2.000	8.190	.02200	-.02070	.06440	.03340	.00402	-.02761	.00960
	GRADIENT	.00260	-.00224	-.00116	-.00058	.00048	.00216	-.00354

DATE 03 OCT 73 TABULATED SOURCE FORCE DATA-1A9B

(BBO106) (04 OCT 73)

AMES 97-707 1A9 O2A + S3 + T9 SRM BOOSTER

PARAMETRIC DATA

REFERENCE DATA

SREF =	2.4210 SQ.FT.	XMRP =	28.5300 IN.
LREF =	39.8490 IN.	YMRP =	.0000 IN.
BREF =	39.8490 IN.	ZMRP =	.0000 IN.
SCALE =	.0300 SCALE		

ALPHA = .000	ORBINC = .500
RUDDER = .000	ELEVON = .000
RUDFLR = .000	

RUN NO. 346/ 0 RN/L = 2.81 GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
1.555	-7.000	-.04900	.03200	.08710	.04380	-.00896	-.03601	.04140
1.555	-4.960	-.04500	.02470	.08490	.04190	-.00732	-.03617	.03740
1.555	-2.920	-.02900	.01680	.08040	.03950	-.00531	-.03573	.03440
1.555	-.920	.00800	-.01290	.08120	.04120	.00146	-.02794	.01460
1.555	5.210	.01600	-.02040	.04820	.00900	.00329	-.02216	.01330
1.555	7.240	.02400	-.02680	.07840	.03710	.00439	-.03169	.01590
1.555	9.300	.00539	-.00387	-.00221	-.00118	.00099	.00022	-.00147
GRADIENT								

RUN NO. 356/ 0 RN/L = 2.31 GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
2.000	-8.160	-.04400	.02650	.07410	.03980	-.00805	-.04388	.04590
2.000	-6.130	-.03620	.01970	.07260	.03790	-.00659	-.03873	.03810
2.000	-.020	-.01100	.00260	.06670	.03290	-.00201	-.02772	.01990
2.000	-.020	.00700	-.01150	.06100	.03120	.00128	-.02341	.01100
2.000	4.070	.01320	-.01620	.06220	.03390	.00238	-.02760	.01120
2.000	6.140	.00440	-.00345	-.00139	-.00042	.02081	.00105	-.00218
GRADIENT								

DATE 03 OCT 73   TABULATED SOURCE FORCE DATA-1A9B

(BB0107)   (04 OCT 73)

AMES 97-707 1A9 O2A + S3 + T9 SRM BOOSTER

REFERENCE DATA

			PARAMETRIC DATA		
SREF =	2.4210 SQ.FT.	XMRP =	28.5300 IN.	ALPHA =	-2.000	ORBINC =	.900
LREF =	39.8490 IN.	YMRP =	.0000 IN.	RUDDER =	.000	ELEVON =	.000
BREF =	39.8490 IN.	ZMRP =	.0000 IN.	RUDFLR =	.000		
SCALE =	.0390 SCALE						

RUN NO. 347/ 0   RNVL = 2.81   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
1.555	-7.030	-.07900	.04200	.08560	.04200	-.01345	-.03508	.03560
1.555	-5.000	-.05900	.03270	.08290	.03970	-.01079	-.03206	.03300
1.555	-2.950	-.04600	.02310	.07900	.03850	-.00842	-.03294	.03290
1.555	5.160	-.00490	-.01220	.07420	.03430	.00073	-.02687	.01700
1.555	5.160	.01600	-.02040	.07450	.03590	.00256	-.02697	.01410
1.555	7.220	.02300	-.02930	.07060	.03050	.00421	-.02798	.01430
1.555	9.270	.00634	-.00468	-.00190	-.00059	.00116	-.00043	-.00024
GRADIENT								

RUN NO. 355/ 0   RNVL = 2.32   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
2.000	-8.230	-.07100	.03920	.07110	.03680	-.01299	-.03203	.03270
2.000	-6.190	-.05900	.03030	.07010	.03520	-.01079	-.02684	.02490
2.000	-4.150	-.04700	.02160	.06790	.03350	-.00860	-.02293	.01620
2.000	4.040	.00100	-.01130	.06020	.02920	.00018	-.01804	.00500
2.000	4.040	.01100	-.01930	.05980	.03150	.00201	-.02236	.00580
2.000	6.110	.01900	-.02640	.05860	.03000	.00348	-.02349	.00560
2.000	8.160	.00586	-.00402	-.00094	-.00053	.00107	.00060	-.00161
GRADIENT								

DATE 05 OCT 73   TABULATED SOURCE FORCE DATA-1A9B

(BBO198)   (14 OCT 73)

AMES 97-707 1A9 O2A + S3 + T9 SRM BOOSTER

PARAMETRIC DATA

REFERENCE DATA

SREF =	2.4210 SQ.FT.	XMRP =	28.5390 IN.	ALPHA =	-4.000
LREF =	39.8490 IN.	YMRP =	.0000 IN.	RUDDER =	.000
WREF =	39.8490 IN.	ZMRP =	.0000 IN.	RUDFLR =	.000
SCALE =	.0390 SCALE				

ORBINC = .300
ELEVON = .000

RUN NO. 348/ 0 RNVL = 2.80 GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
1.555	-8.050	-.10400	.05590	.08500	.04120	-.01903	-.02354	.01780
1.555	-6.070	-.09000	.04590	.08360	.04000	-.01646	-.01852	.00970
1.555	-2.970	-.06600	.02950	.07870	.03690	-.01207	-.01815	.00640
1.555	-2.970	-.00200	-.01380	.07840	.03870	-.00037	-.01998	.00140
1.555	5.160	.01290	-.02400	.06740	.02750	.00220	-.01783	-.00070
1.555	7.220	.02200	-.03280	.07350	.03290	.00402	-.01962	-.00120
1.555	9.290	.00000	.00000	.00000	.00000	.00000	.00000	.00000
1.555	GRADIENT							

RUN NO. 354/ 0 RNVL = 2.41 GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
2.000	-8.250	-.09800	.05100	.06720	.03410	-.01803	-.02224	.01770
2.000	-6.210	-.08500	.04170	.06650	.03200	-.01555	-.01465	.00800
2.000	-4.190	-.07200	.03280	.06460	.02990	-.01317	-.00997	-.00020
2.000	4.010	-.00900	-.00980	.05860	.02700	-.00165	-.00764	-.01090
2.000	6.080	.00600	-.02090	.05700	.02910	.00110	-.01152	-.01100
2.000	8.160	.01400	-.02730	.05610	.02800	.00256	-.01422	-.00980
2.000	GRADIENT	.00768	-.00520	-.00073	-.00035	.00141	.00028	-.00130

DATE 05 OCT 73   TABULATED SOURCE FORCE DATA-1A9B

AMES 97-707 1A9 O2A + S3 + T9 SRM BOOSTER

(B50109)   (04 OCT 73)

PARAMETRIC DATA

REFERENCE DATA

SREF = 2.4210 SQ.FT.   XMRP = 28.5500 IN.
LREF = 39.8490 IN.   YMRP = .0000 IN.
BREF = 39.8490 IN.   ZMRP = .0000 IN.
SCALE = .0300 SCALE

ALPHA = -8.000   ORBINC = .900
RUDDER = .000   ELEVON = .000
RUDFLR = .000

RUN NO. 349/ 0   RN/L = 2.80   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
1.555	-8.090	-.13600	.06810	.03390	.03950	-.02488	-.01123	-.00310
1.555	-6.110	-.11600	.05570	.03280	.03810	-.02159	-.00477	-.01400
1.555	-4.100	-.09600	.04170	.03020	.03590	-.01756	-.00327	-.01850
1.555	3.690	-.01920	-.00800	.07630	.03550	-.00548	-.01119	-.01870
1.555	5.890	-.00300	-.01840	.07470	.03460	-.00055	-.00773	-.02160
1.555	7.920	.01000	-.02750	.07340	.03180	.00183	-.00862	-.02180
1.555		.00971	-.00627	-.00049	-.00005	.00178	-.00190	-.00003
GRADIENT								

RUN NO. 353/ 0   RN/L = 2.31   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
2.000	-8.290	-.13100	.06850	.06450	.03100	-.02397	-.01337	.00420
2.000	-6.260	-.11600	.05710	.06340	.02900	-.02122	-.00381	-.01700
2.000	-4.230	-.10000	.04630	.06190	.02750	-.01829	.00387	-.02130
2.000	4.000	-.02300	-.00630	.05600	.02370	-.00411	.00636	-.03420
2.000	8.150	.00200	-.02310	.05320	.02390	.00047	-.00337	-.02670
2.000		.00936	-.00639	-.00072	-.00046	.00172	.00034	-.00157
GRADIENT								

DATE 05 OCT 73   TABULATED SOURCE FORCE DATA-IA98

AMES 97-707 IA9 O2A + S3 + T9 SRM BOOSTER

REFERENCE DATA

SREF =	2.4210 SQ.FT.	XMRP =	28.5300 IN.
LREF =	39.8490 IN.	YMRP =	.0000 IN.
BREF =	39.8490 IN.	ZMRP =	.0000 IN.
SCALE =	.0300 SCALE		

PARAMETRIC DATA

ALPHA =	-8.000	ORBINC =	.500
RUDDER =	.000	ELEVON =	.000
RUDFLR =	.000		

RUN NO. 359/ 0   RNVL = 2.80   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
1.555	-8.120	-.16500	.07870	.08210	.03790	-.03029	-.00666	-.01310
1.555	-6.130	-.14600	.06580	.08020	.03580	-.02671	-.00045	-.02400
1.555	-4.120	-.12500	.05220	.07780	.03360	-.02287	.03305	-.03340
1.555	3.840	-.03400	-.00480	.07420	.03220	-.00622	.00321	-.04980
1.555	5.900	-.01700	-.01460	.06410	.02220	-.00311	.00574	-.04690
1.555	7.950	-.00100	-.02490	.07220	.02960	-.00018	.00358	-.04550
GRADIENT		.01143	-.00716	-.00045	-.00018	.00209	.00017	-.00214

RUN NO. 352/ 0   RNVL = 2.32   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
2.000	-8.320	-.16200	.08190	.06170	.02930	-.02974	-.01096	-.02210
2.000	-6.280	-.14500	.06970	.06000	.02680	-.02653	-.00047	-.01790
2.000	-4.260	-.12800	.05780	.05980	.02550	-.02342	.01054	-.03320
2.000	-.160	-.08200	.02640	.05770	.02320	-.01900	.02296	-.05480
2.000	4.000	-.04300	.00050	.05510	.02160	-.00777	.01885	-.03520
2.000	6.000	-.02400	-.01390	.05220	.02180	-.00429	.01431	-.05270
2.000	8.170	-.01600	-.01630	.05190	.02120	-.00283	.00852	-.04680
GRADIENT		.01029	-.02694	-.02057	-.00047	.00189	.03100	-.00266

AMES 97-707 1A9 O2A + S3 + T9 SRM BOOSTER

REFERENCE DATA

		PARAMETRIC DATA	
SREF = 2.4210 SQ.FT.	XMRP = 28.5590 IN.	ALPHA = -6.000	ORBINC = .900
LREF = 39.0690 IN.	YMRP = .0000 IN.	RUDDER = -15.000	ELEVON = .000
BREF = 39.0690 IN.	ZMRP = .0000 IN.	RUDFLR = .000	
SCALE = .0390 SCALE			

RUN NO. 361/ 0   RVL = 2.81   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
1.555	-8.340	-.16900	.08110	.08270	.03780	-.03102	-.00738	-.01160
1.555	-6.280	-.14920	.06720	.08010	.03510	-.02736	-.00012	-.02490
1.555	-4.210	-.12800	.05320	.07790	.03270	-.02552	.00452	-.03440
1.555	-.040	-.07500	.01860	.07070	.03090	-.01372	.00925	-.04920
1.555	4.130	-.03100	-.00700	.07370	.03110	-.00567	.00441	-.04890
1.555	6.160	-.01400	-.01700	.07270	.03000	-.00256	.00581	-.04960
1.555	8.220	.00000	-.02640	.07140	.02790	.00000	.00490	-.04840
GRADIENT		.01163	-.00722	-.00046	-.00019	.00214	-.00001	-.05174

RUN NO. 367/ 0   RVL = 2.32   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
2.000	-8.320	-.15900	.08080	.06120	.02820	-.02919	-.01096	-.00190
2.000	-6.290	-.14300	.06920	.05950	.02580	-.02626	-.00152	-.01670
2.000	-4.260	-.12600	.05690	.05960	.02500	-.02305	.01113	-.03460
2.000	-.160	-.08700	.02580	.05800	.02330	-.01464	.02284	-.05470
2.000	3.990	-.04900	-.00130	.05460	.02170	-.00732	.01865	-.05530
2.000	6.080	-.02100	-.01550	.05300	.02210	-.00374	.01926	-.05450
2.000	8.150	-.01300	-.01840	.05200	.02180	-.00228	.01041	-.05040
GRADIENT		.01042	-.00705	-.00061	-.00040	.00191	.00091	-.00250

(DB0012)   (04 OCT 73)

AMES 97-707 1A9 O2A + S3 + T9 SRM BOOSTER

PARAMETRIC DATA

REFERENCE DATA

SREF =	2.4210 SQ.FT.	XMRF =	28.5350 IN.	ALPHA = -4.000 OBINC = .500
LREF =	39.8490 IN.	YMRF =	.0000 IN.	RUDDER = -15.000 ELEVON = .000
BREF =	39.8490 IN.	ZMRF =	.0000 IN.	RUDFLR = .000
SCALE =	.0300 SCALE			

RUN NO. 362/ 0   RN/L = 2.80   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
1.555	-8.260	-.10700	.05700	.08570	.04160	-.01967	-.02591	.01860
1.555	-6.230	-.09300	.04700	.06430	.04090	-.01711	-.01791	.00910
1.555	-4.180	-.07300	.03520	.04240	.03880	-.01372	-.01630	.00470
1.555	-.010	-.04000	.01160	.07500	.03620	-.00732	-.00182	.00550
1.555	4.100	-.00900	-.00650	.07940	.03850	-.00165	-.02284	.00970
1.555	6.140	.00700	-.02000	.07590	.03590	.00128	-.02007	.00060
1.555	8.200	.01900	-.02870	.07370	.03350	.00348	-.02243	.00050
GRADIENT		.00797	-.00528	-.00037	-.00204	.00146	-.0057	.00024

RUN NO. 368/ 0   RN/L = 2.31   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
2.000	-8.290	-.09700	.04980	.06670	.03370	-.01785	-.02087	.01530
2.000	-6.220	-.08000	.03990	.06630	.03160	-.01528	-.01398	.00480
2.000	-4.200	-.07000	.03060	.06470	.03010	-.01281	-.00871	-.00220
2.000	-.110	-.03600	.00880	.06180	.02770	-.00659	-.00637	-.00780
2.000	4.010	-.00500	-.01260	.05760	.02630	-.00091	-.00771	-.01200
2.000	4.010	-.00800	-.02210	.05700	.02900	.00145	-.01161	-.01170
2.000	6.080	.01700	-.02810	.05570	.02770	.00311	-.01457	-.00980
2.000	8.150	.03792	-.00526	-.00086	-.00045	.00145	.00012	-.00119
GRADIENT								

DATE 03 OCT 73   TABULATED SOURCE FORCE DATA-1A9B

AMES 97-707 1A9 O2A + S3 + T9 SRM BOOSTER

PARAMETRIC DATA

REFERENCE DATA

SREF =	2.4210 SQ.FT.	XMRF =	28.5399 IN.
LREF =	39.6490 IN.	YMRF =	.0000 IN.
BREF =	39.6490 IN.	ZMRF =	.0000 IN.
SCALE =	.0090 SCALE		

ALPHA = .000 ORBINC = .000
RUDDER = -15.000 ELEVON = .000
RUFLR = .000

RUN NO. 363/ 0 RN/L = 2.60 GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
1.555	-8.200	-.05500	.03510	.08760	.04450	-.00980	-.04164	.04690
1.555	-6.160	-.04900	.02680	.08620	.04350	-.00830	-.03752	.04060
1.555	-4.120	-.03390	.02060	.06310	.04100	-.00604	-.03560	.03630
1.555	.030	-.01300	.00540	.07850	.04010	-.00238	-.03634	.02590
1.555	4.100	.00670	-.01000	.08160	.04240	.00110	-.02946	.01630
1.555	6.170	.01450	-.01690	.07950	.03970	.00256	-.02816	.01490
1.555	8.210	.02500	-.02450	.07690	.03640	.00421	-.02666	.01120
GRADIENT		.00474	-.00372	-.00019	.00017	.00087	.00077	-.00219

RUN NO. 369/ 0 RN/L = 2.30 GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
2.000	-8.180	-.04500	.02760	.07420	.03970	-.00833	-.04216	.04340
2.000	-6.150	-.03700	.02090	.07320	.03820	-.00687	-.03719	.03580
2.000	-4.110	-.02690	.01400	.07130	.03670	-.00512	-.03241	.02960
2.000	-.030	-.01500	.00150	.06680	.03310	-.00163	-.02586	.01719
2.000	4.050	.00970	-.01300	.06110	.00000	.00165	-.01650	.01286
2.000	6.130	.01600	-.01820	.06130	.03360	.00293	-.02665	.00970
2.000	8.180	.02200	-.02380	.06090	.03190	.00402	-.02656	.00650
2.000		.00353	-.00331	-.00125	-.00450	.00063	.00195	-.00243

DATE 03 OCT 73   TABULATED SOURCE FORCE DATA-IA9B

GBX1141   (24 OCT 73)

AMES 97-707 IA9 O2A + S3 + T9 SRM BOOSTER

REFERENCE DATA   PARAMETRIC DATA

SREF =	2.4210 SQ.FT.	XMRP =	28.5390 IN.	ALPHA = 4.000 ORBINC = .500
LREF =	39.8490 IN.	YMRP =	.0000 IN.	RUDDER = -15.000 ELEVON = .000
BREF =	39.8490 IN.	ZMRP =	.0000 IN.	BDFLR = .000
SCALE =	.0300 SCALE			

RUN NO. 364/ 0   RN/L = 2.79   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
1.555	-8.140	-.00850	.01390	.09360	.04790	-.00146	-.04479	.04500
1.555	-6.110	-.00595	.01100	.09110	.04570	-.00091	-.04356	.03790
1.555	-4.060	.00390	.00710	.08790	.04340	.00000	-.03724	.03210
1.555	.040	.00900	-.00330	.08140	.04260	.00165	-.03239	.02300
1.555	4.110	.01890	-.01360	.08590	.04320	.00329	-.02680	.01500
1.555	6.170	.02200	-.01810	.08480	.04390	.00402	-.02348	.00900
1.555	8.210	.02600	-.01860	.07980	.03730	.00402	-.02442	.00210
1.555		.00220	-.00253	-.00030	-.00002	.00040	.00118	-.00058
GRADIENT								

RUN NO. 370/ 0   RN/L = 2.32   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
2.000	-8.120	.00190	.00740	.08010	.04480	.00018	-.05556	.04980
2.000	-6.080	.00590	.00250	.07790	.04230	.00091	-.04584	.04390
2.000	-4.050	.00800	-.00060	.07540	.04040	.00146	-.03389	.03320
2.000	.000	.01390	-.00570	.07140	.03680	.00238	-.02893	.01620
2.000	4.080	.02000	-.01270	.06590	.03390	.00366	-.02010	.00160
2.000	6.150	.02200	-.01360	.06490	.03530	.00356	-.02446	.00420
2.000	8.250	.02600	-.01990	.05420	.03390	.00476	-.02575	.00650
2.000		.00148	-.00149	-.00122	-.00080	.00027	.00243	-.00345
GRADIENT								

NONE

AMES 97-737 IA9 CRA + S3 + T9 SRM BOOSTER

(B04155) (24 OCT 73)

REFERENCE DATA

PARAMETRIC DATA

SREF = 2.6210 SQ.FT.	XREF = 28.3330 IN.	ALPHA = 6.000 ORBINC = .500
LREF = 39.0490 IN.	YREF = .0000 IN.	RUDDER = -15.000 ELEVON = .000
BREF = 39.0490 IN.	ZREF = .0000 IN.	RUDFLR = .000
SCALE = .0300 SCALE		

RUN NO. 363/ 0   RN/L = 2.60   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
1.555	-8.150	.01700	.00010	.09600	.04890	.00311	-.04087	.03590
1.555	-6.120	.01800	-.00040	.09330	.04630	.00329	-.03327	.02660
1.555	-4.080	.01800	-.00340	.09050	.04420	.00329	-.03209	.02230
1.555	.040	.02100	-.00740	.08330	.04370	.00384	-.02709	.01220
1.555	4.140	.02500	-.01480	.08650	.04230	.00457	-.02374	.00510
1.555	6.190	.02600	-.01700	.08460	.04000	.00476	-.02042	.00160
1.555	8.230	.02500	-.01700	.08080	.03690	.00457	-.01815	-.00590
GRADIENT		.00085	-.00163	-.00049	-.00023	.00016	.00102	-.00214

RUN NO. 371/ 0   RN/L = 2.31   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
2.000	-6.100	.02700	-.00690	.07950	.04380	.00494	-.04131	.03350
2.000	-4.060	.02700	-.00790	.07630	.04120	.00494	-.03514	.02410
2.000	.000	.02500	-.00870	.07170	.03710	.00457	-.02319	.00770
2.000	4.090	.03000	-.01480	.06630	.03360	.00549	-.01695	-.00650
2.000	6.160	.02800	-.01290	.06460	.03440	.00512	-.01719	-.00600
2.000	8.220	.03590	-.01700	.05490	.03390	.00549	-.01920	-.00400
GRADIENT		.00037	-.00085	-.00123	-.00093	.00007	.00248	-.00075

DATE 05 OCT 73   TABULATED SOURCE FORCE DATA-1A9B

AMES 97-707 1A9 O2A + S3 + T9 SRM BOOSTER   (BD0118)   (04 OCT 73)

REFERENCE DATA   PARAMETRIC DATA

SREF = 2.4210 SQ.FT.   XMRP = 28.5300 IN.   ALPHA =   8.000   ORBINC =   .900
LREF = 39.6490 IN.   YMRP =   .0000 IN.   RUDDER = -15.000   ELEVON =   .000
BREF = 39.6490 IN.   ZMRP =   .0000 IN.   RUDFLR =   .000
SCALE =   .0300 SCALE

RUN NO. 366/ 0   RN/L =   2.80   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
1.555	-8.180	.04290	-.01070	.09920	.04970	.00768	-.03379	.02180
1.555	-6.130	.04000	-.00960	.09660	.04790	.01732	-.02800	.01260
1.555	-4.080	.03600	-.00800	.09270	.04450	.00659	-.02364	.00570
1.555	.050	.03400	-.01150	.08500	.04380	.00622	-.01751	-.00670
1.555	.050	.03300	-.01590	.08630	.04070	.00604	-.01635	-.00970
1.555	4.170	.03300	-.01770	.08560	.03970	.02604	-.01166	-.01630
1.555	6.220	.03300	-.01870	.08210	.03680	.00604	-.00763	-.02020
1.555	8.280	-.00136	-.00096	-.00078	-.00046	-.00207	.00088	-.00187
GRADIENT								

RUN NO. 372/ 0   RN/L =   2.31   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
2.000	-8.180	.05100	-.01600	.08480	.07540	.00933	-.04609	.03190
2.000	-6.130	.05100	-.01710	.08230	.04670	.02933	-.03424	.02160
2.000	-4.090	.04800	-.01570	.07990	.04440	.00878	-.02552	.00720
2.000	.000	.04100	-.01380	.07380	.03900	.01750	-.01103	-.01420
2.000	.000	.03700	-.01380	.06820	.03540	.00677	-.00698	-.02180
2.000	4.110	.03400	-.01150	.06540	.03540	.01622	-.00918	-.02110
2.000	6.180	.04000	-.01840	.06620	.03470	.00732	-.01115	-.01860
2.000	8.290	-.00134	-.00023	-.00138	-.00110	-.00025	.00226	-.00354
GRADIENT								

DATE 25 OCT 73

TABULATED SOURCE FORCE DATA-IA98

AMES 92-707 IA9 C2A + S3 + T9 SRM BOOSTER

(BBO177) (04 OCT 73)

PARAMETRIC DATA

REFERENCE DATA

SREF =	2.4210 SQ.FT.	XMRP =	28.5393 IN.
LREF =	39.8490 IN.	YMRP =	.0000 IN.
BREF =	39.8490 IN.	ZMRP =	.0000 IN.
SCALE =	.0300 SCALE		

ALPHA =	-8.000 ORBINC = .900
RUDDER =	-10.000 ELEVON = .000
RUDFLR =	.000

RUN NO. 373/ 0   RN/L = 2.0)   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
1.555	-8.355	-.16700	.06040	.08270	.03830	-.03065	-.01771	-.01060
1.555	-6.280	-.14700	.06780	.08050	.03600	-.02699	-.01169	-.02160
1.555	-4.210	-.12500	.05270	.07770	.03400	-.02297	.00238	-.03030
1.555	-.050	-.07600	.02010	.07170	.03230	-.01390	.00759	-.04520
1.555	4.120	-.03100	-.01630	.07360	.03190	-.00567	.00296	-.04550
1.555	6.170	-.01500	-.01590	.07290	.03020	-.00274	.02488	-.04640
1.555	8.250	.00100	-.02560	.07170	.02920	.00018	.00366	-.04480
1.555	GRADIENT	.01128	-.00708	-.00049	-.00023	.00208	.00007	-.00182

RUN NO. 379/ 0   RN/L = 2.3   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
2.000	-8.320	-.15600	.08110	.06100	.02870	-.02900	-.01315	.00190
2.000	-6.270	-.14200	.06900	.05930	.02630	-.02698	-.00321	-.01370
2.000	-4.250	-.12600	.05890	.05910	.00000	-.02905	.01280	-.03000
2.000	-.160	-.08200	.02820	.05740	.02500	-.01500	.02169	-.05090
2.000	3.990	-.04400	.00120	.05430	.02090	-.00805	.01798	-.05230
2.000	6.070	-.02500	-.01180	.05320	.02240	-.00447	.01360	-.04900
2.000	8.150	-.01600	-.01610	.05140	.02130	-.00283	.00970	-.04550
2.000	GRADIENT	.00995	-.00689	-.00058	.00253	.00182	.00063	-.02270

DATE 05 OCT 73

TABULATED SOURCE FORCE DATA-IA9B

(BB018) (04 OCT 73)

AMES 97-707 IA9 O2A + S3 + T9 SRM BOOSTER

REFERENCE DATA

		PARAMETRIC DATA		
SREF =	2.4210 SQ.FT.	XMRP =	28.5300 IN.	
LREF =	39.8490 IN.	YMRP =	.0000 IN.	
BREF =	39.8490 IN.	ZMRP =	.0000 IN.	
SCALE =	.0300 SCALE			

ALPHA =   -4.000   ORBINC =   .500
RUDDER = -10.000   ELEVON =   .000
RUDFLR =   .000

RUN NO. 374/ 0   RN/L = 2.80   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
1.555	-8.260	-.10700	.05710	.08600	.04170	-.01967	-.02293	.01780
1.555	-6.230	-.09200	.04730	.08430	.04010	-.01693	-.01624	.01030
1.555	-4.170	-.07500	.03560	.08230	.03840	-.01372	-.01702	.00660
1.555	-.010	-.04100	.01240	.07480	.03600	-.00750	-.02209	.00690
1.555	4.090	-.00920	-.00830	.07840	.03750	-.00165	-.02246	.00560
1.555	6.140	.00690	-.02120	.07530	.03550	.00146	-.02009	.00090
1.555	8.200	.01800	-.02880	.07350	.03390	.00329	-.02019	.00090
GRADIENT		.00799	-.00532	-.00248	-.00011	.00146	-.00066	-.00010

RUN NO. 380/ 0   RN/L = 2.30   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
2.000	-8.250	-.09700	.05010	.06680	.03360	-.01785	-.02375	.02080
2.000	-6.270	-.08400	.04110	.06630	.03170	-.01537	-.01600	.00860
2.000	-4.190	-.07100	.03230	.06450	.02980	-.01299	-.01155	.00280
2.000	-.110	-.03800	.01060	.06130	.02690	-.00695	-.00772	-.00360
2.000	4.010	-.00700	-.01140	.05760	.02670	-.00128	-.00888	-.00850
2.000	6.080	.00700	-.02170	.05670	.02910	.00128	-.01282	-.00790
2.000	8.150	.01600	-.02780	.05570	.02760	.00293	-.01643	-.00520
GRADIENT		.00780	-.00533	-.00284	-.00038	.00143	.00032	-.00138

DATE 25 OCT 73

TABULATED SOURCE FORCE DATA-IA9B

AMES 97-707 IA9 O2A + S3 + T9 SRM BOOSTER

(BB0119)   (04 OCT 73)

PARAMETRIC DATA

ALPHA =	.000	ORBINC =	.500
RUDDER =	-10.000	ELEVON =	.000
RUDFLR =	.000		

REFERENCE DATA

SREF =	2.4210 SQ.FT.	XMRP =	28.5390 IN.
LREF =	39.8490 IN.	YMRP =	.0000 IN.
BREF =	39.8490 IN.	ZMRP =	.0000 IN.
SCALE =	.0300 SCALE		

RUN NO. 375/ 0   RN/L = 2.79   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
1.555	-8.210	-.05400	.03520	.08690	.04410	-.00998	-.04147	.04780
1.555	-6.170	-.04600	.02960	.08640	.04290	-.00852	-.03735	.04100
1.555	-4.120	-.03400	.02990	.08360	.04110	-.00632	-.03632	.03770
1.555	-.120	-.01400	.00570	.07830	.03970	-.00256	-.03626	.03130
1.555	.020	-.00670	-.00990	.08190	.04220	.00110	-.02982	.01940
1.555	4.100	.00600	-.01770	.07940	.03940	.00274	-.02961	.01700
1.555	6.160	.01500	-.02520	.07640	.03620	.00421	-.02762	.01360
1.555	8.220	.02300	-.00375	-.00026	.00013	.00090	.00079	-.00222
GRADIENT		.01487						

RUN NO. 381/ 0   RN/L = 2.31   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
2.000	-8.180	-.04700	.02810	.07410	.03950	-.00870	-.04333	.04640
2.000	-6.150	-.03800	.02080	.07280	.03760	-.00705	-.03868	.03960
2.000	-4.120	-.03000	.01480	.07090	.03620	-.00549	-.03562	.03180
2.000	-.040	-.01100	.00220	.06650	.03290	-.00201	-.02715	.02060
2.000	4.050	.00700	-.01210	.06170	.03120	.00128	-.02331	.01190
2.000	6.130	.01400	-.01740	.06140	.03370	.00256	-.02757	.01250
2.000	8.180	.02100	-.02320	.06060	.03130	.00384	-.02663	.01290
2.000		.00453	-.00329	-.00120	-.00061	.00093	.00126	-.00244
GRADIENT								

TABULATED SOURCE FORCE DATA-1A9B

(BBO120) (04 OCT 73)

AMES 97-707 1A9 O2A + S3 + T9 SRM BOOSTER

REFERENCE DATA

				PARAMETRIC DATA	
SREF =	2.4210 SQ.FT.	XMRP =	28.5300 IN.	ALPHA =	4.000	ORBINC =	.900
LREF =	39.8400 IN.	YMRP =	.0000 IN.	RUDDER =	-10.000	ELEVON =	.000
BREF =	39.8400 IN.	ZMRP =	.0000 IN.	RUDFLR =	.000		
SCALE =	.0310 SCALE						

RUN NO. 376/ 0 RNVL = 2.86 GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
1.555	-8.150	-.00800	.01380	.09590	.04800	-.00146	-.04498	.04590
1.555	-6.120	-.00400	.01070	.09120	.04590	-.00073	-.04090	.03890
1.555	-4.070	.00000	.00700	.08820	.04350	.00000	-.03782	.03450
1.555	.030	.01000	-.00380	.08120	.04250	.00183	-.03227	.02320
1.555	4.120	.01900	-.01440	.08510	.04330	.00348	-.02612	.01140
1.555	6.180	.02500	-.01880	.08430	.04040	.00421	-.02609	.01050
1.555	8.250	.02200	-.01840	.07900	.03680	.00402	-.02433	.00890
	GRADIENT	.00232	-.00261	-.00038	-.00000	.00042	.00143	-.00280

RUN NO. 382/ 0 RNVL = 2.33 GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
2.000	-8.120	.00100	.00740	.08000	.04460	.00018	-.05246	.05430
2.000	-6.080	.00400	.00250	.07800	.04260	.00073	-.04859	.04680
2.000	-4.050	.00600	-.00060	.07530	.04020	.00146	-.04145	.03670
2.000	.010	.01200	-.00490	.07110	.03650	.00220	-.03044	.02010
2.000	4.070	.01800	-.01150	.06480	.03340	.00329	-.02131	.00500
2.000	6.150	.01900	-.01210	.06460	.03490	.00348	-.02628	.00830
2.000	8.200	.02400	-.01830	.06380	.03330	.00439	-.02779	.01050
	GRADIENT	.00123	-.00134	-.00129	-.00084	.00023	.00248	-.00390

DATE 05 OCT 73   TABULATED SOURCE FORCE DATA-IA98

(BB0121)   (04 OCT 73)

AMES 97-707 IA9 O2A + S3 + T9 SRM BOOSTER

REFERENCE DATA   PARAMETRIC DATA

SREF =	2.6210 SQ.FT.	XMRP =	28.5300 IN.
LREF =	39.8400 IN.	YMRP =	.0000 IN.
BREF =	39.8400 IN.	ZMRP =	.0000 IN.
SCALE =	.0300 SCALE		

ALPHA =	6.000	ORBINC =	.500
RUDDER =	-10.000	ELEVON =	.000
RUDFLR =	.000	

RUN NO. 377/ 0   RNVL = 2.60   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
1.555	-8.170	.01800	.00000	.09630	.04890	.00329	-.04193	.03780
1.555	-6.130	.01800	-.00090	.09350	.04640	.00329	-.03639	.02980
1.555	-4.070	.01700	-.00030	.09030	.04440	.00311	-.03272	.02400
1.555	.040	.02000	-.00670	.08290	.04350	.00366	-.02736	.01340
1.555	4.140	.02500	-.01440	.08710	.04270	.00457	-.02281	.00480
1.555	6.190	.02500	-.01630	.08490	.04010	.00457	-.01964	.00080
1.555	8.260	.02500	-.01680	.08050	.03700	.00457	-.01717	-.00170
GRADIENT		.00097	-.00172	-.00039	-.00021	.00018	.00121	-.00234

RUN NO. 383/ 0   RNVL = 2.31   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
2.000	-8.150	.02600	-.00450	.08210	.04690	.00476	-.04838	.04630
2.000	-6.100	.02700	-.00710	.08020	.04450	.00494	-.04264	.03690
2.000	-4.060	.02600	-.00760	.07750	.04220	.00476	-.03682	.02740
2.000	.010	.02900	-.00830	.07220	.03790	.00421	-.02503	.01020
2.000	4.090	.02800	-.01360	.06660	.03410	.00512	-.01604	-.00350
2.000	6.160	.02600	-.01210	.06550	.03520	.00476	-.01874	-.00270
2.000	8.220	.02900	-.01670	.06440	.03360	.00531	-.02145	.00060
GRADIENT		.00025	-.00074	-.00151	-.00099	.00004	.00255	-.00379

DATE 05 OCT 73   TABULATED SOURCE FORCE DATA-1A9B

                        APES 97-707 1A9 O2A + S3 + T9 SRM BOOSTER   (BBO122)   (04 OCT 73)

                                                                    PARAMETRIC DATA

REFERENCE DATA

SREF =	2.4210 SQ.FT.	XMRP =	28.5390 IN.	ALPHA =	8.000
LREF =	39.8490 IN.	YMRP =	.0000 IN.	RUDDER =	-10.000
BREF =	39.8490 IN.	ZMRP =	.0000 IN.	RUDFLR =	.000
SCALE =	.0300 SCALE			ORBINC =	.500
				ELEVON =	.000

RUN NO. 378/ 0   RN/L = 2.60   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
1.555	-8.290	.04390	-.01140	.09930	.04970	.00787	-.03489	.02470
1.555	-6.190	.04090	-.01010	.09640	.04710	.00732	-.02922	.01550
1.555	-4.070	.03790	-.00860	.09270	.04430	.00677	-.02450	.00800
1.555	-.090	.03330	-.01070	.08470	.04320	.00604	-.01840	-.00400
1.555	.090	.03390	-.01550	.08640	.04110	.00604	-.01712	-.00810
1.555	4.110	.03200	-.01650	.08560	.03990	.00585	-.01210	-.01490
1.555	6.220	.03200	-.01770	.08130	.03620	.00585	-.00852	-.01880
1.555	8.270					-.00009	-.00090	-.00197
GRADIENT		-.00049	-.00084	-.00077	-.00039			

RUN NO. 384/ 0   RN/L = 2.31   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
2.000	-8.180	.05100	-.01570	.08440	.04940	.00933	-.04244	.03590
2.000	-6.140	.05000	-.01690	.08210	.04690	.00915	-.03551	.02490
2.000	-4.080	.04600	-.01510	.07880	.04390	.00842	-.02688	.01070
2.000	.000	.03990	-.01290	.07290	.03830	.00713	-.01251	-.01070
2.000	4.110	.03500	-.01250	.06740	.03460	.00640	-.00863	-.01790
2.000	6.190	.03200	-.01020	.06560	.03470	.00585	-.01025	-.01820
2.000	8.250	.03700	-.01690	.06530	.03410	.00677	-.01264	-.01510
GRADIENT		-.00134	.00032	-.00139	-.00110	-.00025	.01223	-.00349

TABULATED SOURCE FORCE DATA-IA98

(B60123)   (04 OCT 73)

AMES 97-707 IA9 O2A + S3 + T9 SRM BOOSTER

PARAMETRIC DATA

REFERENCE DATA

SREF =	2.6... SQ.FT.	XMRP =	28.5330 IN.
LREF =	39.0690 IN.	YMRP =	.0000 IN.
BREF =	39.0690 IN.	ZMRP =	.0000 IN.
SCALE =	.0300 SCALE		

ALPHA =	-8.000	ORBINC =	.900
RUDDER =	15.000	ELEVON =	.000
RUDFLR =	.000		

RUN NO. 385/ 0   RNVL = 2.80   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
1.555	-8.350	-.16870	.08090	.08290	.03770	-.03063	-.00650	-.01270
1.555	-6.280	-.14990	.06800	.08020	.03560	-.02756	.00019	-.02490
1.555	-4.210	-.12700	.05340	.07740	.03290	-.02333	.00448	-.03350
1.555	-.040	-.07600	.02020	.06990	.03090	-.01390	.00876	-.04760
1.555	4.130	-.03100	-.00790	.07280	.03100	-.00567	.00443	-.04900
1.555	8.290	-.00100	-.02560	.07110	.02810	-.00018	.00416	-.04690
	GRADIENT	.01151	-.00728	-.00055	-.00023	.00212	-.00001	-.00186

RUN NO. 391/ 0   RNVL = 2.31   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
2.000	-8.310	-.15990	.08190	.06140	.02900	-.02919	-.01251	-.00060
2.000	-6.270	-.14200	.06930	.05970	.02640	-.02608	-.00283	-.01430
2.000	-4.290	-.12700	.05810	.05950	.02520	-.02333	.00869	-.03100
2.000	-.160	-.08900	.02870	.05760	.02310	-.01518	.02187	-.05280
2.000	3.990	-.04300	.00050	.05460	.02130	-.00787	.01870	-.05420
2.000	6.070	-.02400	-.01360	.05180	.02150	-.00439	.01437	-.05160
2.000	8.160	-.01500	-.01680	.05170	.02120	-.00264	.00942	-.04740
	GRADIENT	.01019	-.02699	-.00059	-.00047	.00188	.00119	-.00281

TABULATED SOURCE FORCE DATA-1A9B

(BB0124)   (04 OCT 73)

AMES 97-707 1A9 02A + S3 + T9 SRM BOOSTER

PARAMETRIC DATA

REFERENCE DATA

SREF	=	2.4210 SQ.FT.	XMRP	=	26.5300 IN.		ALPHA	=	-4.000	ORBINC	=	.500
LREF	=	39.8400 IN.	YMRP	=	.0000 IN.		RUDDER	=	15.000	ELEVON	=	.000
BREF	=	39.8400 IN.	ZMRP	=	.0000 IN.		RUDFLR	=	.000			
SCALE	=	.0300 SCALE										

RUN NO. 386/ 0   RN/L = 2.80   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
1.555	-8.250	-.10700	.05690	.08540	.04190	-.01967	-.02297	.01740
1.555	-6.220	-.09200	.04730	.08370	.04030	-.01693	-.01787	.00990
1.555	-4.160	-.07600	.03580	.08160	.03850	-.01400	-.01664	.00530
1.555	.010	-.04100	.01260	.07420	.03570	-.00790	-.02203	.00620
1.555	.010	-.00900	-.00860	.07800	.03760	-.00165	-.02288	.00590
1.555	4.110	.00700	-.02030	.07520	.03590	.00128	-.02047	.00110
1.555	6.150	.01700	-.02810	.07300	.03320	.00311	-.01937	-.00130
1.555	8.200	.01700	-.02810	.07300	.03320	.00311	-.01480	-.00840
GRADIENT		.00810	-.00537	-.00044	-.00011	.00149	-.00076	-.00004

RUN NO. 392/ 0   RN/L = 2.31   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
2.000	-8.250	-.09700	.05030	.06730	.03410	-.01785	-.02264	.01870
2.000	-6.220	-.08300	.04080	.06690	.03240	-.01518	-.01573	.00800
2.000	-4.190	-.07100	.03190	.06500	.03000	-.01299	-.01059	.00090
2.000	-.100	-.03800	.01050	.06140	.02730	-.00695	-.00749	-.00500
2.000	-.100	-.00800	-.01070	.05720	.02650	-.00146	-.00811	-.01030
2.000	4.010	.00600	-.02130	.05620	.02840	.00110	-.01200	-.00950
2.000	6.080	.01500	-.02730	.05620	.02790	.00274	-.01480	-.00840
2.000	8.150	.00768	-.00520	-.00095	-.00045	.00141	.00030	-.00137
GRADIENT		.00768	-.00520	-.00095	-.00045	.00141	.00030	-.00137

DATE 05 OCT 73   TABULATED SOURCE FORCE DATA-1A9B

AMES 97-707 1A9 O2A + S3 + T9 SRM BOOSTER   (BB0123)   (04 OCT 73)

PARAMETRIC DATA

REFERENCE DATA

SREF =	2.4210 SQ.FT.	XREF = 28.5300 IN.
LREF =	39.8490 IN.	YREF = .0000 IN.
BREF =	39.8490 IN.	ZREF = .0000 IN.
SCALE =	.0320 SCALE	

ALPHA =	.000 ORBINC = .900
RUDDER =	15.000 ELEVON = .000
RUDFLR =	.000

RUN NO. 387/ D   RNVL = 2.80   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
1.555	-8.210	-.05400	.03520	.08790	.04450	-.00996	-.04106	.04690
1.555	-6.170	-.04600	.02940	.08610	.04300	-.00852	-.03617	.03860
1.555	-4.120	-.03500	.02160	.08320	.04110	-.00650	-.03532	.03570
1.555	.030	-.01500	.00610	.07990	.03960	-.00284	-.03494	.02670
1.555	4.110	.00400	-.00950	.08090	.04190	.00075	-.02927	.01790
1.555	6.160	.01400	-.01680	.07870	.03960	.00258	-.02854	.01470
1.555	8.220	.02200	-.02450	.07580	.03600	.00412	-.02699	.01220
GRADIENT		.00474	-.00378	-.00028	.00010	.00088	.00073	-.00216

RUN NO. 393/ D   RNVL = 2.32   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
2.000	-8.170	-.04900	.02720	.07430	.03980	-.00833	-.04398	.04630
2.000	-6.130	-.03700	.02040	.07310	.03810	-.00687	-.03907	.03900
2.000	-4.100	-.02900	.01430	.07110	.03640	-.00531	-.03386	.03130
2.000	-.030	-.01200	.00290	.06630	.03220	-.00220	-.02699	.01990
2.000	4.080	.01000	-.01420	.06040	.03000	.00183	-.02429	.01100
2.000	4.080	.02000	-.02280	.06110	.03170	.00366	-.02760	.01090
2.000	8.180	.00477	-.00349	-.00131	-.00078	.00087	.00117	-.00248
GRADIENT								

DATE 03 OCT 73   TABULATED SOURCE FORCE DATA-1A98

                                    (050128)   (04 OCT 73)

AMES 97-707 IA9 O2A + S3 + T9 SRM BOOSTER

PARAMETRIC DATA

REFERENCE DATA

SREF = 2.4210 SQ.FT.	XMRP = 28.5300 IN.	ALPHA = 4.000 ORBINC = .500
LREF = 39.0490 IN.	YMRP = .0000 IN.	RUDDER = 15.000 ELEVON = .000
BREF = 39.0490 IN.	ZMRP = .0000 IN.	RUDFLR = .000
SCALE = .0350 SCALE		

RUN NO. 388/ 0   RN/L = 2.80   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
1.555	-8.150	-.00900	.01390	.09380	.04830	-.00165	-.04454	.04490
1.555	-6.120	-.00500	.01100	.09115	.04620	-.00091	-.03945	.03720
1.555	-4.060	-.00100	.00780	.08790	.04380	-.00018	-.03721	.03290
1.555	.040	.00900	-.00380	.08070	.04240	.00165	-.03196	.02960
1.555	4.120	.01900	-.01420	.08490	.04330	.00348	-.02552	.01960
1.555	6.180	.02250	-.01810	.08400	.04050	.00402	-.02511	.00830
1.555	8.220	.02200	-.01820	.07890	.03710	.00402	-.02579	-.00750
1.553		.00244	-.00269	-.00037	-.00006	.00045	.00143	-.00285
GRADIENT								

RUN NO. 394/ 0   RN/L = 2.31   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
2.000	-8.110	-.00100	.00680	.08030	.04490	.00018	-.05271	.03300
2.000	-6.070	-.00500	.00240	.07780	.04240	.00091	-.04826	.04590
2.000	-4.040	-.00800	-.00070	.07550	.04040	.00146	-.04149	.03580
2.000	.010	.01100	-.00420	.07120	.03600	.00201	-.03039	.01960
2.000	4.070	.01600	-.01160	.06550	.03340	.00329	-.02131	.00900
2.000	6.140	.02000	-.01500	.06490	.03490	.00366	-.02308	.00640
2.000	8.200	.02400	-.01790	.06470	.03350	.00439	-.02633	.00800
2.000		.00123	-.00134	-.00123	-.00084	.00023	.00249	-.00380
GRADIENT								

DATE 25 OCT 73   TABULATED SOURCE FORCE DATA-IA9B

AMES 97-737 IA9 O2A + S3 + T9 SRM BOOSTER

PARAMETRIC DATA

REFERENCE DATA

SREF =	2.4210 SQ.FT.	XMRP =	28.5390 IN.
LREF =	39.6490 IN.	YMRP =	.0000 IN.
BREF =	39.6490 IN.	ZMRP =	.0000 IN.
SCALE =	.0390 SCALE		

ALPHA =	6.000
RUDDER =	15.000
RUDFLR =	.000

ORBINC =	.500
ELEVON =	.000

RUN NO. 389/ 0   RN/L = 2.79   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
1.555	-8.160	.01700	.00020	.09630	.04910	.00311	-.04108	.03600
1.555	-6.110	.01700	.00000	.09320	.04660	.00311	-.03553	.02780
1.555	-4.070	.01600	.00060	.09010	.04430	.00293	-.03169	.02200
1.555	.050	.02100	-.00790	.08250	.04320	.00384	-.02653	.01110
1.555	.050	.02600	-.01360	.08650	.04240	.00476	-.02276	.00439
1.555	4.150	.02600	-.01640	.08460	.04310	.05457	-.01954	.00040
1.555	6.190	.02490	-.01610	.07960	.03640	.00439	-.01736	-.00160
1.555	8.230	.02490	-.00197	-.00046	-.00023	.00022	.00310	-.00215
GRADIENT		.00122						

RUN NO. 395/ 0   RN/L = 2.31   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
2.000	-8.140	.02600	-.00510	.08200	.04660	.00476	-.04863	.04540
2.000	-6.090	.02600	-.00710	.08030	.04460	.00476	-.04316	.03640
2.000	-4.050	.02500	-.00760	.07790	.04215	.00457	-.03660	.02640
2.000	.010	.02300	-.00760	.07220	.03740	.00421	-.02294	.01090
2.000	4.090	.02700	-.01290	.06690	.03370	.00494	-.01587	-.00440
2.000	4.090	.02600	-.01190	.06570	.03510	.00476	-.01642	-.00573
2.000	6.160	.02600	-.01600	.06550	.03410	.00312	-.02224	-.00190
2.000	8.220	.02800	-.00265	-.00133	-.00103	.00005	.00255	-.00378
GRADIENT		.00025						

DATE 05 OCT 73   TABULATED SOURCE FORCE DATA-1A98   (0800128)   (04 OCT 73)

AMES 97-707 IA9 O2A + S3 + T9 SRM BOOSTER

REFERENCE DATA

					PARAMETRIC DATA
SREF =	2.4210 SQ.FT.	XMRP =	26.5500 IN.		ALPHA =	8.995	ORBINC =	.925
LREF =	39.8495 IN.	YMRP =	.0000 IN.		RUDDER =	15.000	ELEVON =	.000
BREF =	39.8495 IN.	ZMRP =	.0000 IN.		RUDFLR =	.000
SCALE =	.0000 SCALE

RUN NO. 395/ 0   RN/L = 2.85   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
1.555	-8.190	.04390	-.01130	.09920	.05010	.00787	-.03407	.02290
1.555	-6.140	.04000	-.01000	.09620	.04715	.00732	-.02822	.01570
1.555	-4.070	.03700	-.00820	.09250	.04470	.00677	-.02362	.00630
1.555	.050	.03300	-.01070	.08470	.04360	.00604	-.01848	-.00410
1.555	.050	.03300	-.01580	.08670	.04130	.00614	-.01646	-.00940
1.555	4.180	.03300	-.01630	.08570	.03990	.00567	-.01140	-.01630
1.555	6.220	.03000	-.01680	.08130	.03660	.00569	-.00760	-.02230
1.555	8.270	.03000	-.00992	-.00070	-.00041	-.00009	.00088	-.00190
GRADIENT		-.00048	-.00092	-.00070	-.00041	-.00009		

RUN NO. 396/ 0   RN/L = 2.32   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY
2.000	-8.170	.05000	-.01540	.08390	.04870	.00915	-.04291	.03490
2.000	-6.120	.04500	-.01710	.08200	.04660	.00915	-.03543	.02590
2.000	-4.070	.04500	-.01490	.07900	.04390	.00823	-.02683	.00960
2.000	.000	.03800	-.01220	.07310	.03840	.00695	-.01192	-.01210
2.000	4.110	.03400	-.01210	.06755	.03459	.00622	-.00721	-.02030
2.000	6.180	.03100	-.01000	.06590	.03480	.00567	-.00987	-.02020
2.000	8.250	.03600	-.01570	.06630	.03450	.00659	-.01111	-.01770
2.000		-.00134	.00034	-.00136	-.00115	-.00025	.00240	-.00365
GRADIENT		-.00134	.00034	-.00136	-.00115			

DATE 05 OCT 73   TABULATED SOURCE FORCE DATA-IA9B

(RDE01)   (13 JAN 73)

APES 97-707 IA9 O2A + S3 + T9 EXTERNAL TANK

PARAMETRIC DATA

REFERENCE DATA

					BETA =	.000	ORBINC =	.500
SRD =	2.4210 SQ.FT.	XMRP =	28.5500 IN.		RUDER =	.000	ELEVON =	.000
LRD =	39.8450 IN.	YMRP =	.0000 IN.		RUDFLR =	.000		
BRD =	39.8450 IN.	ZMRP =	.0000 IN.					
SCALE =	.0300 SCALE							

RUN NO. 341/ 0   RN/L = 2.75   GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CLM	CA	CAF	CBL	CYN	CBL	CY	CABLV	BETA
1.555	-8.400	-.57800	.23010	.41640	.24990	-.00400	.00420		-.01170	140.00000	.18000
1.555	-6.330	-.42500	.16480	.41620	.25550	-.00390	.00450		-.01200	140.00000	.19200
1.555	-4.230	-.27800	.10430	.41370	.26030	-.00360	.00240		-.00900	140.00000	.20000
1.555	-2.190	-.13500	.04460	.41270	.26300	-.00400	.00390		-.01020	140.00000	.21000
1.555	-.120	.00100	-.01550	.41290	.26550	-.00420	.00330		-.01080	140.00000	.22000
1.555	1.990	.13500	-.07580	.40890	.26620	-.00450	.00190		-.00940	140.00000	.22000
1.555	4.010	.26000	-.13470	.40670	.26890	-.00490	.00150		-.00710	140.00000	.23500
1.555	6.060	.38200	-.18550	.45600	.26970	-.00490	-.00200		-.00710	140.00000	.14090
1.555	8.130	.50700	-.23450	.45630	.26890	-.00430	-.00310		-.00710	140.00000	.25900
	GRADIENT	.06505	-.02896	-.00286	.00099	-.00015	.00043		.00032	-.00008	.00359

RUN NO. 351/ 0   RN/L = 2.27   GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CLM	CA	CAF	CBL	CYN	CBL	CY	CABLV	BETA
2.000	-8.360	-.55400	.22460	.38530	.25500	-.00140	.01190		-.00930	140.00000	-.31000
2.000	-6.310	-.41000	.16400	.38380	.25290	-.00130	.01330		-.01170	140.00000	-.31000
2.000	-4.250	-.27900	.11220	.38240	.25450	-.00010	.01140		-.00920	140.00000	-.30000
2.000	-2.210	-.15500	.06140	.3798	.25420	.00070	.00940		-.00680	140.00000	-.29000
2.000	-.160	-.03500	.01070	.38000	.25440	.00010	.00840		-.00380	140.00000	-.26000
2.000	1.890	.09100	-.04470	.37860	.25710	-.00090	.00770		-.00570	140.00000	-.27000
2.000	3.930	.21400	-.09960	.37920	.26030	-.00130	.00690		-.00480	140.00000	-.26000
2.000	5.980	.34100	-.15310	.37560	.26030	-.00070	.00190		-.00390	140.00000	-.25000
2.000	8.020	.46400	-.20180	.37470	.26210	-.00120	.00490		-.00820	140.00000	-.25500
	GRADIENT	.06021	-.02589	-.00037	.00071	-.00018	-.00061		.00048	.00000	.00469

DATE 03 OCT 73

TABULATED SOURCE FORCE DATA-1A9B

(RD0202) (13 JUN 73)

AMES 97-707 1A9 O2A + S3 + T9 EXTERNAL TANK

REFERENCE DATA

SREF =	2.4210 SQ.FT.	XMRP = 28.5300 IN.
LREF =	39.6490 IN.	YMRP = .0000 IN.
BREF =	39.6490 IN.	ZMRP = .0000 IN.
SCALE =	.0300 SCALE	

PARAMETRIC DATA

ALPHA =	8.000	ORBINC =	.500
RUDDER =	.000	ELEVON =	.000
RUDFLR =	.000		

RUN NO. 342/ 0   RNVL = 2.81   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV	ALPHA
1.555	-7.140	.51000	-.24240	.42380	.26330	.12070	-.10760	.26300	140.00000	8.12000
1.555	-5.100	.51400	-.24100	.41800	.26550	.08000	-.07210	.18580	140.00000	8.11000
1.555	-3.050	.51300	-.24070	.40990	.26660	.05370	-.05680	.12510	140.00000	8.10000
1.555	5.110	.52300	-.23780	.42370	.27610	-.07900	.06700	-.16430	140.00000	8.14000
1.555	7.140	.52100	-.23490	.42760	.27710	-.11860	.10630	-.26680	140.00000	8.14000
1.555	9.190	.52700	-.24060	.43030	.27160	-.16590	.16340	-.37480	140.00000	8.14000
GRADIENT		.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 360/ 0   RNVL = 2.30   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV	ALPHA
2.000	-8.320	.47700	-.22490	.37170	.25780	.14970	-.15420	.34960	140.00000	8.02000
2.000	-6.270	.46700	-.21120	.37260	.25580	.11170	-.11780	.25960	140.00000	8.01000
2.000	-4.210	.46500	-.20720	.37620	.25870	.07190	-.07500	.16840	140.00000	8.01000
2.000	3.990	.46800	-.19750	.38070	.26490	-.07890	.09460	-.19560	140.00000	8.04000
2.000	6.060	.46800	-.19410	.38090	.26730	-.12090	.13720	-.29500	140.00000	8.04000
2.000	8.120	.48700	-.21040	.38020	.26690	-.14800	.16690	-.38140	140.00000	8.04000
GRADIENT		.02037	.00118	.00055	.00076	-.01859	.02068	-.04439	.00000	.00366

DATE 03 OCT 73   TABULATED SOURCE FORCE DATA-1A9B

(RDDE03)   (13 JUN 73)

AMES 97-707 IA9 O2A + S3 + T9 EXTERNAL TANK

REFERENCE DATA

PARAMETRIC DATA

SREF =	2.4210 SQ.FT.	XMRP =	28.9300 IN.
LREF =	39.6400 IN.	YMRP =	.0000 IN.
BREF =	39.6400 IN.	ZMRP =	.0000 IN.
SCALE =	.0350 SCALE		

ALPHA =	6.000	ORBINC =	.500
RUDDER =	.000	ELEVON =	.000
RUDFLR =	.000		

RUN NO. 343/ 0   RN/L = 2.60   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV	ALPHA
1.355	-7.120	.38700	-.19210	.42420	.26590	.11610	-.10420	.25820	140.00000	6.05000
1.355	-5.070	.39200	-.19310	.42100	.27070	.07710	-.07190	.18440	140.00000	6.04000
1.355	-3.050	.39000	-.19420	.41090	.26870	.05270	-.09540	.12570	140.00000	6.04000
1.355	5.060	.39600	-.18910	.42380	.27650	-.07400	.06910	-.16450	140.00000	6.06000
1.355	5.080	.39500	-.18840	.42670	.27830	-.11490	.10520	-.26450	140.00000	6.06000
1.355	7.110	.40400	-.19510	.43070	.27390	-.16080	.16150	-.37030	140.00000	6.06000
1.355	9.140	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000
GRADIENT		.00000	.00071							

RUN NO. 359/ 0   RN/L = 2.30   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV	ALPHA
2.000	-8.300	.35200	-.17070	.37350	.25480	.14380	-.15500	.34910	140.00000	5.97000
2.000	-6.250	.34100	-.15840	.37490	.25380	.11010	-.12250	.26340	140.00000	5.97000
2.000	-4.200	.33800	-.15670	.37660	.25870	.06890	-.07980	.17080	140.00000	5.96000
2.000	3.970	.34100	-.15020	.38080	.26300	-.07590	.09950	-.19870	140.00000	5.98000
2.000	6.030	.34000	-.14740	.38250	.26690	-.11660	.14060	-.29660	140.00000	5.98000
2.000	8.080	.35600	-.16150	.38280	.26720	-.14390	.17210	-.38500	140.00000	5.98000
GRADIENT		.00037	.00071	.00051	.00053	-.01772	.02195	-.04523	.00000	.00245

DATE 05 OCT 73   TABULATED SOURCE FORCE DATA-1A98   (RB0204)   (13 JUN 73)

AMES 97-717 IA9 O2A + S3 + T9 EXTERNAL TANK

PARAMETRIC DATA

ALPHA = 4.000   ORBINC = .900
RUDDER =   .000   ELEVON = .000
RUDFLR =   .000

REFERENCE DATA

SREF = 2.4210 SQ.FT.   XMRP = 28.5300 IN.
LREF = 39.8490 IN.   YMRP =   .0000 IN.
BREF = 39.8490 IN.   ZMRP =   .0000 IN.
SCALE = .0300 SCALE

RUN NO. 344/ 0   RNVL = 2.61   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV	ALPHA
1.555	-7.090	.26400	-.13790	.42220	.26610	.11180	-.10030	.25320	140.00000	3.99000
1.555	-5.070	.27190	-.14310	.41900	.27080	.07210	-.06860	.18130	140.00000	3.99000
1.555	-3.040	.26700	-.14190	.41010	.26790	.05140	-.05380	.12310	140.00000	3.98000
1.555	5.080	.27600	-.14260	.42390	.27740	-.07210	.07180	-.16940	140.00000	4.00000
1.555	5.080	.27400	-.14080	.42540	.27720	-.11350	.10730	-.26920	140.00000	4.00000
1.555	7.080	.27800	-.14530	.43030	.27350	-.15550	.15960	-.36820	140.00000	4.00000
1.555	9.100	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000
GRADIENT										

RUN NO. 398/ 0   RNVL = 2.31   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV	ALPHA
2.000	-8.270	.22900	-.11460	.37580	.25320	.13700	-.15390	.34670	140.00000	3.92000
2.000	-6.240	.21900	-.10420	.37480	.25130	.10490	-.12160	.26170	140.00000	3.92000
2.000	-4.270	.21000	-.10100	.37460	.25500	.06620	-.08060	.17060	140.00000	3.91000
2.000	3.950	.21400	-.09920	.37940	.26240	-.07200	.09960	-.20060	140.00000	3.93000
2.000	5.990	.21900	-.10000	.38180	.26660	-.11040	.13890	-.29570	140.00000	3.93000
2.000	8.030	.23100	-.11590	.38290	.26480	-.13970	.17440	-.38730	140.00000	3.93000
GRADIENT		.02049	.00022	.00039	.00091	-.01696	.02211	-.04555	.00000	.00245

DATE 03 OCT 73   TABULATED SOURCE FORCE DATA-1A9B

(RBO205)   (13 JUN 73)

AMES 97-727 1A9 O2A + S3 + T9 EXTERNAL TANK

PARAMETRIC DATA

REFERENCE DATA

SREF =	2.6210 SQ.FT.	XMRP =	26.3300 IN.	
LREF =	39.6490 IN.	YMRP =	.0000 IN.	
BREF =	39.6490 IN.	ZMRP =	.0000 IN.	
SCALE =	.0300 SCALE			

ALPHA =	2.000 ORBINC = .900
RUDDER =	.000 ELEVON = .000
RUDFLR =	.000

RUN NO. 345/ 0   RN/L = 2.82   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV	ALPHA
1.955	-7.100	.14200	-.06130	.42220	.26480	.10950	-.10290	.29690	140.00000	1.94000
1.955	-5.070	.14600	-.08550	.41930	.26860	.07190	-.07220	.18590	140.00000	1.93000
1.955	-3.050	.14200	-.08480	.41000	.26580	.05060	-.04960	.11930	140.00000	1.93000
1.955	-3.050	.15000	-.08870	.42590	.27810	-.07160	.07490	-.19300	140.00000	1.94000
1.955	5.050	.15100	-.08990	.42640	.27480	-.11060	.10690	-.27210	140.00000	1.94000
1.955	7.070	.15800	-.09670	.43190	.27170	-.15220	.16900	-.37120	140.00000	1.93000
1.955	9.090	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000
	GRADIENT									

RUN NO. 357/ 0   RN/L = 2.31   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV	ALPHA
2.000	-8.280	.10720	-.06130	.37430	.25150	.12720	-.14380	.33530	140.00000	1.88000
2.000	-6.250	.09600	-.05110	.37340	.24910	.09800	-.11940	.25420	140.00000	1.88000
2.000	-4.140	.09100	-.04690	.37390	.25070	.06120	-.07580	.16360	140.00000	1.88000
2.000	3.940	.09300	-.04940	.37830	.26210	-.06610	.09420	-.19570	140.00000	1.88000
2.000	5.980	.09700	-.05450	.38120	.26640	-.10350	.13530	-.29170	140.00000	1.88000
2.000	8.020	.11100	-.07030	.38260	.26290	-.13350	.17420	-.38800	140.00000	1.87000
2.000	.00025	-.00031	.00054	.00141	-.01575	.02104	-.04447	.00000	-.00000	
	GRADIENT									

DATE 03 OCT 73 TABULATED SOURCE FORCE DATA-1A9B

APES 97-707 1A9 O2A + S3 + T9 EXTERNAL TANK (RDOE08) (13 JUN 73)

PARAMETRIC DATA

REFERENCE DATA

SREF =	2.4210 SQ.FT.	XMRP =	28.5300 IN.	
LREF =	39.8490 IN.	YMRP =	.0000 IN.	
BREF =	39.8490 IN.	ZMRP =	.0000 IN.	
SCALE =	.0300 SCALE			

ALPHA =	.000 ORBINK = .900
RUDDER =	.000 ELEVON = .000
RUDFLR =	.000

RUN NO. 346/ 0 RN/L = 2.81 GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CA	CLM	CAF	CBL	CYN	CY	CABLV	ALPHA
1.555	-7.100	.01100	.41890	-.01850	.26230	.10230	-.09700	.24960	140.00000	-.12000
1.555	-5.080	.01400	.41430	-.02500	.26310	.06890	-.06780	.17850	140.00000	-.12000
1.555	-3.060	.00800	.41180	-.02130	.26380	.04730	-.04890	.11400	140.00000	-.12000
1.555	5.050	.01900	.42140	-.03220	.27550	-.07140	.07250	-.19450	140.00000	-.13000
1.555	7.060	.01900	.42390	-.03380	.27090	-.10590	.10410	-.27050	140.00000	-.13000
1.555	9.090	.02800	.43040	-.04490	.26930	-.14520	.15530	-.36660	140.00000	-.13000
1.555	GRADIENT	.00000	.00000	.00000	.07000	.00000	.00000	.00000	.00000	.00000

RUN NO. 356/ 0 RN/L = 2.31 GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CA	CLM	CAF	CBL	CYN	CY	CABLV	ALPHA
2.000	-6.290	-.01100	.37380	-.00860	.24900	.12280	-.14000	.33340	140.00000	-.17000
2.000	-6.290	-.02200	.37280	.00130	.24610	.09110	-.10820	.24670	140.00000	-.17000
2.000	-.130	-.03500	.37700	.01150	.25290	-.00410	.01060	-.02210	140.00000	-.16000
2.000	3.990	-.02400	.37450	-.00230	.25710	-.06730	.09300	-.20600	140.00000	-.16000
2.000	5.980	-.01600	.37790	-.01070	.26150	-.10760	.13020	-.29860	140.00000	-.17000
2.000	GRADIENT	.00270	-.00061	-.00338	.00103	-.0154	.02020	-.04507	.00000	.00000

AMES 97-717 1A9 O2A + S3 + T9 EXTERNAL TANK

REFERENCE DATA

SREF =	2.4210 SQ.FT.	XMRP =	28.5500 IN.
LREF =	39.0450 IN.	YMRP =	.0000 IN.
BREF =	39.0450 IN.	ZMRP =	.0000 IN.
SCALE =	.0300 SCALE		

PARAMETRIC DATA

ALPHA =	-2.000
RUDDER =	.000
RUDFLR =	.000
ORBINC =	.900
ELEVON =	.000

RUN NO. 347/ 0   RNVL = 2.61   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV	ALPHA
1.555	-7.110	-.12900	.04470	.41790	.25690	.09720	-.09460	.24900	140.00000	-2.16000
1.555	-5.090	-.12100	.03840	.41520	.26030	.06860	-.06940	.18260	140.00000	-2.16000
1.555	-3.070	-.12700	.04120	.41090	.25940	.04710	-.04570	.11420	140.00000	-2.18000
1.555	5.040	-.12100	.02650	.42010	.27190	-.06780	.07390	-.19530	140.00000	-2.19000
1.555	7.060	-.12200	.02750	.42130	.27050	-.09770	.10120	-.26820	140.00000	-2.20000
1.555	9.080	-.11500	.01630	.42760	.26720	-.13540	.15310	-.36690	140.00000	-2.21000
1.555	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 355/ 0   RNVL = 2.32   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV	ALPHA
2.000	-8.310	-.13400	.04830	.37580	.24630	.12350	-.14790	.34960	140.00000	-2.21000
2.000	-6.260	-.14700	.03840	.37930	.24530	.09260	-.11180	.25890	140.00000	-2.21000
2.000	-4.230	-.15300	.06340	.37870	.24710	.06060	-.07140	.16830	140.00000	-2.20000
2.000	3.940	-.15600	.05480	.38230	.25750	-.06230	.09040	-.19680	140.00000	-2.21000
2.000	5.970	-.14800	.04320	.38460	.26390	-.09480	.12890	-.29180	140.00000	-2.22000
2.000	8.010	-.13300	.02400	.38110	.26010	-.12300	.16630	-.38690	140.00000	-2.23000
2.000	GRADIENT	-.00037	-.00105	.00044	.00127	-.01504	.01980	-.04469	.00000	-.00122

DATE 05 OCT 73   TABULATED SOURCE FORCE DATA-1A9B

AMES 97-707 IA9 O2A + S3 + T9 EXTERNAL TANK

(9502019)   (13 JUN 73)

PARAMETRIC DATA

REFERENCE DATA

SREF	=	2.4210 SQ.FT.	XMRP	=	26.5300 IN.
LREF	=	39.8490 IN.	YMRP	=	.0000 IN.
BREF	=	39.8490 IN.	ZMRF	=	.0000 IN.
SCALE	=	.0300 SCALE			

ALPHA	=	-4.000	ORBINC	=	.500
RUDDER	=	.000	ELEVON	=	.000
RUDFLR	=	.000			

RUN NO. 348/ 0   RN/L = 2.80   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV	ALPHA
1.555	-8.130	-.25700	.10470	.41990	.25160	.11020	-.12520	.30360	140.00000	-4.25000
1.555	-6.150	-.25600	.09980	.41500	.25460	.07740	-.08200	.21080	140.00000	-4.25000
1.555	-3.070	-.26900	.10190	.41290	.25630	.04540	-.04810	.11790	140.00000	-4.24000
1.555	5.030	-.26100	.08530	.41990	.26880	-.06510	.07890	-.20270	140.00000	-4.26000
1.555	5.030	-.26300	.08410	.42180	.26490	-.09280	.10690	-.27690	140.00000	-4.27000
1.555	7.050	-.26300	.07360	.42570	.26320	-.12710	.15820	-.37360	140.00000	-4.28000
1.555	9.070	-.25800	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000
	GRADIENT	-.00000								

RUN NO. 354/ 0   RN/L = 2.41   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV	ALPHA
2.000	-8.310	-.26100	.10670	.37540	.24490	.11810	-.14820	.35170	140.00000	-4.26000
2.000	-6.270	-.27100	.11350	.37790	.24140	.08820	-.11260	.26060	140.00000	-4.25000
2.000	-4.230	-.28000	.11850	.37960	.24550	.05740	-.07070	.16750	140.00000	-4.25000
2.000	3.920	-.28400	.15510	.38250	.25420	-.05790	.08470	-.19120	140.00000	-4.27000
2.000	3.920	-.27700	.09320	.38460	.25880	-.08990	.12790	-.29130	149.00000	-4.28000
2.000	5.960	-.26600	.07790	.38030	.25660	-.11780	.16490	-.38630	140.00000	-4.29000
2.000	6.010	-.00049	-.00152	.00036	.00107	-.01415	.01907	-.04401	.00000	-.00245
	GRADIENT									

DATE 03 OCT 73

TABULATED SOURCE FORCE DATA-IA98

(R0209)   (13 JUN 73)

AMES 97-707 IA9 O2A + S3 + T9 EXTERNAL TANK

REFERENCE DATA

SREF =	2.6210 SQ.FT.	XMRP =	28.5300 IN.
LREF =	39.0490 IN.	YMRP =	.0000 IN.
BREF =	39.0490 IN.	ZMRP =	.0000 IN.
SCALE =	.0200 SCALE		

PARAMETRIC DATA

ALPHA =	-6.000	ORBINC =	.900
RUDDER =	.000	ELEVON =	.000
RUDFLR =	.000		

RUN NO. 349/ D   RN/L = 2.60   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV	ALPHA
1.555	-8.180	-.40200	.16990	.41980	.24940	.10740	-.13410	.32080	140.00000	-6.32000
1.555	-6.170	-.40100	.16220	.41600	.25020	.07480	-.09090	.29370	140.00000	-6.31000
1.555	-4.180	-.40990	.16350	.41570	.25060	.05870	-.06940	.16770	140.00000	-6.31000
1.555	3.640	-.41400	.15310	.41990	.26300	-.05230	.06970	-.16290	140.00000	-6.33000
1.555	5.690	-.40200	.14130	.42050	.26420	-.06790	.09150	-.23370	140.00000	-6.34000
1.555	7.740	-.40300	.13910	.42270	.26020	-.10090	.12940	-.32000	140.00000	-6.35000
	GRADIENT	-.00064	-.00130	.00054	.00159	-.01419	.01766	-.04220	-.00000	-.00256

RUN NO. 353/ D   RN/L = 2.31   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV	ALPHA
2.000	-8.340	-.40000	.17190	.37160	.23990	.11020	-.14900	.35720	140.00000	-6.31000
2.000	-6.300	-.40800	.17540	.37550	.23920	.08140	-.11220	.26350	140.00000	-6.30000
2.000	-4.250	-.41500	.17730	.37830	.24520	.05170	-.06890	.16820	140.00000	-6.29000
2.000	3.930	-.41600	.15900	.38050	.24910	-.05230	.08120	-.19410	140.00000	-6.32000
2.000	8.020	-.40700	.13660	.37580	.25080	-.11430	.16430	-.39390	140.00000	-6.34000
	GRADIENT	-.00012	-.00224	.00027	.00048	-.01271	.01835	-.04429	-.00000	-.00367

DATE 05 OCT 73   TABULATED SOURCE FORCE DATA-IA9B

(R8Q210)   (13 JUN 73)

APES 97-707 IA9 O2A + S3 + T9 EXTERNAL TANK

PARAMETRIC DATA

REFERENCE DATA

SREF	=	2.6210 SQ.FT.	XMRP	=	28.5320 IN.
LREF	=	39.6490 IN.	YMRP	=	.0000 IN.
BREF	=	39.6490 IN.	ZMRP	=	.0000 IN.
SCALE	=	.0070 SCALE			

ALPHA	=	-8.000	ORBINC	=	.900
RUDDER	=	.000	ELEVON	=	.000
RUDFLR	=	.000			

RUN NO. 350/ 0   RN/L = 2.80   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV	ALPHA
1.555	-8.290	-.55500	.23940	.41840	.24540	.10560	-.14430	.33950	140.00000	-8.39000
1.555	-6.210	-.55900	.23360	.41460	.24700	.07490	-.10190	.25390	140.00000	-8.38000
1.555	-6.210	-.56800	.23180	.41530	.24560	.05750	-.07670	.18230	140.00000	-8.38000
1.555	-4.220	-.57000	.21760	.41920	.25660	-.05280	.07500	-.17450	140.00000	-8.40000
1.555	3.650	-.55900	.20660	.41970	.25670	-.06910	.10170	-.25280	140.00000	-8.41000
1.555	5.710	-.55600	.20190	.42070	.25550	-.09910	.14110	-.33900	140.00000	-8.42000
1.555	7.770	-.00025	-.00180	.00050	.00140	-.01402	.01928	-.04534	.00000	-.00254
GRADIENT										

RUN NO. 352/ 0   RN/L = 2.32   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV	ALPHA
2.000	-8.390	-.54500	.23940	.37900	.24370	.11330	-.15760	.38320	140.00000	-8.37000
2.000	-6.330	-.54600	.23400	.38020	.24160	.07790	-.11560	.28280	140.00000	-8.36000
2.000	-4.280	-.55200	.23460	.38540	.25020	.04890	-.06790	.18090	140.00000	-8.35000
2.000	-.170	-.55400	.22470	.38570	.25260	-.00360	.01490	-.01850	140.00000	-8.36000
2.000	3.940	-.54970	.21010	.38550	.25080	-.05480	.09420	-.21400	140.00000	-8.38000
2.000	5.980	-.54100	.19560	.38400	.25170	-.08350	.14010	-.31850	140.00000	-8.39000
2.000	8.050	-.54100	.18970	.38240	.25100	-.11690	.18320	-.42240	140.00000	-8.40000
2.000		-.00036	-.00298	.00201	.00207	-.01262	.01972	-.04894	.00000	-.00365
GRADIENT										

DATE 05 OCT 73   TABULATED SOURCE FORCE DATA-1A9B

AMES 97-717 1A9 O2A + S3 + T9 EXTERNAL TANK

PARAMETRIC DATA

REFERENCE DATA

SREF = 2.4210 SQ.FT.	XMRP = 28.5920 IN.	
LREF = 39.0490 IN.	YMRP = .0000 IN.	
BREF = 39.0490 IN.	ZMRP = .0000 IN.	
SCALE = .0300 SCALE		

ALPHA =	-8.0/0 ORBINC = .900
RUDDER =	-15.010 ELEVON = .000
RUDFLR =	.000

RUN NO. 363/ 0 RVL = 2.61 GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV	ALPHA
1.555	-8.420	-.56500	.24660	.42500	.24620	.09010	-.13540	.34160	140.00000	-8.39000
1.555	-6.360	-.56600	.24150	.41920	.24670	.05540	-.08650	.24590	140.00000	-8.39000
1.555	-4.310	-.57700	.23960	.41690	.24690	.03700	-.06090	.17130	140.00000	-8.39000
1.555	-.160	-.58200	.23620	.42140	.25250	-.02250	.01950	-.01760	140.00000	-8.39000
1.555	-.180	-.57400	.22350	.42290	.25790	-.08120	.09960	-.20620	140.00000	-8.41000
1.555	3.940	-.56200	.21260	.42420	.25720	-.09680	.12730	-.28510	140.00000	-8.41000
1.555	6.000	-.55800	.20680	.42340	.25390	-.12780	.16880	-.37520	140.00000	-8.42000
1.555	8.060	.00036	-.00195	.00248	.00139	-.01433	.01941	-.04576	.00000	-.00364
GRADIENT										

RUN NO. 367/ 0 RVL = 2.32 GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV	ALPHA
2.000	-8.390	-.53800	.23740	.38910	.24210	.09790	-.15590	.38260	140.00000	-8.36000
2.000	-6.340	-.54100	.23390	.38180	.24270	.06300	-.11170	.28270	140.00000	-8.35000
2.000	-4.290	-.55100	.23700	.38690	.24900	.03310	-.06250	.18030	140.00000	-8.34000
2.000	-.180	-.55400	.22770	.38950	.25560	-.01960	.02440	-.01840	140.00000	-8.36000
2.000	-.180	-.54900	.21340	.39100	.25820	-.07380	.10860	-.21930	140.00000	-8.38000
2.000	3.930	-.54100	.19880	.39100	.26070	-.10230	.15450	-.32410	140.00000	-8.39000
2.000	5.990	-.54300	.19370	.38880	.25760	-.13470	.19800	-.42920	140.00000	-8.41000
2.000	8.040	.00024	-.00287	.00050	.00112	-.01300	.02082	-.04861	-.00000	-.00487
GRADIENT										

DATE 25 OCT 73   TABULATED SOURCE FORCE DATA-1A9B

                         AMES 97-707 1A9 O2A + S3 + T9 EXTERNAL TANK   (RD0212)   (13 JUN 73)

                                                                              PARAMETRIC DATA

REFERENCE DATA

SREF = 2.4210 SQ.FT.   XMRP = 28.5390 IN.   ALPHA =   -4.000   ORBINC =   .500
LREF = 39.8490 IN.   YMRP =   .0000 IN.   RUDDER = -15.000   ELEVON =   .000
BREF = 39.8490 IN.   ZMRP =   .0000 IN.   RUDFLR =   .000
SCALE = .0390 SCALE

RUN NO. 362/ 0   RN/L = 2.80   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV	ALPHA
1.555	-8.350	-.26100	.10820	.42510	.25390	.09660	-.11790	.30720	140.00000	-4.25000
1.555	-6.310	-.26220	.10340	.41880	.25550	.06130	-.06950	.21580	140.00000	-4.24000
1.555	-4.260	-.26600	.10200	.41810	.25760	.04220	-.05230	.15420	140.00000	-4.24000
1.555	-.170	-.26300	.11240	.42210	.26310	-.01890	.01760	-.01410	140.00000	-4.25000
1.555	3.930	-.26600	.09510	.42190	.26710	-.07910	.08860	-.18550	140.00000	-4.25000
1.555	5.980	-.25710	.08760	.42490	.26760	-.09830	.10670	-.25340	140.00000	-4.25000
1.555	8.020	-.19000	.06290	.42610	.26500	-.13280	.14790	-.33800	140.00000	-4.22000
GRADIENT		.00000	-.00084	.00035	.00116	-.01481	.01720	-.04148	-.00000	-.00122

RUN NO. 368/ 0   RN/L = 2.31   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV	ALPHA
2.000	-8.320	-.25600	.10550	.36360	.24940	.10680	-.13890	.35450	140.00000	-4.25000
2.000	-6.280	-.26300	.11130	.38430	.24610	.07400	-.09840	.25880	140.00000	-4.25000
2.000	-4.240	-.27400	.11740	.38600	.25180	.04120	-.05320	.16210	140.00000	-4.24000
2.000	-.170	-.27800	.11440	.38780	.25790	-.01890	.02580	-.02090	140.00000	-4.25000
2.000	3.920	-.27700	.10440	.38850	.25950	-.07950	.10150	-.21620	140.00000	-4.26000
2.000	5.960	-.26830	.09090	.38970	.26670	-.11070	.14140	-.30520	140.00000	-4.27000
2.000	8.010	-.25700	.07620	.38610	.26350	-.13880	.17830	-.40360	140.00000	-4.28000
GRADIENT		-.02037	-.00159	.00031	.00794	-.01479	.01896	-.04513	.00000	-.00245

DATE 05 OCT 73   TABULATED SOURCE FORCE DATA-IA98

(R0213)   (13 JUN 73)

AMES 97-707 IA9 O2A + S3 + T9 EXTERNAL TANK

PARAMETRIC DATA

REFERENCE DATA

SREF =	2.4210 SQ.FT.	XMRP =	28.3300 IN.
LREF =	39.0490 IN.	YMRP =	.0000 IN.
BREF =	39.0490 IN.	ZMRP =	.0000 IN.
SCALE =	.0350 SCALE		

ALPHA =	.000 ORBINC = .000
RUDDER =	-15.000 ELEVON = .000
RUDFLR =	.000

RUN NO. 363/ 0   RN/L = 2.80   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV	ALPHA
1.555	-8.310	.01600	-.01970	.42260	.25930	.10690	-.11490	.29340	140.0000	-.12990
1.555	-6.290	.01390	-.01830	.41950	.26490	.06840	-.06510	.20480	140.0000	-.12906
1.555	-4.240	.01900	-.02390	.41330	.26500	.04460	-.05110	.14930	140.0000	-.12990
1.555	-.140	.00000	-.01190	.41590	.26760	-.01870	.01820	-.01620	140.0000	-.11900
1.555	3.940	.02100	-.03010	.41810	.27760	-.08110	.09430	-.17800	140.0000	-.11990
1.555	5.990	.01900	-.02760	.42440	.27690	-.10530	.09830	-.23720	140.0000	-.12990
1.555	8.030	.02200	-.03290	.42920	.27230	-.14450	.14590	-.33900	140.0000	-.12990
1.555	GRADIENT	.00075	-.00075	.00059	.00154	-.01539	.01635	-.04051	.0000	.00122

RUN NO. 369/ 0   RN/L = 2.50   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV	ALPHA
2.000	-8.300	-.00900	-.01160	.37970	.25340	.11770	-.14220	.35220	140.0000	-.17000
2.000	-6.260	-.01700	.00070	.38220	.25220	.08380	-.10480	.26210	140.0000	-.17306
2.000	-4.220	.00900	.00570	.38320	.25530	.04570	-.06170	.16760	140.0000	-.16000
2.000	-.160	-.03200	.01290	.38600	.26190	-.02090	.02710	-.02340	140.0000	-.16030
2.000	3.930	-.02000	-.00115	.38550	.00000	-.08390	.10730	-.20990	140.0000	-.16000
2.000	5.980	-.01400	-.00920	.38630	.27310	-.11900	.14450	-.33420	140.0000	-.17006
2.000	8.020	.00200	-.02610	.38490	.26620	-.14790	.16560	-.39560	140.0000	-.17900
2.000	GRADIENT	.00037	-.00083	.00028	-.03131	-.01602	.02074	-.04632	-.00000	.00030

DATE 25 OCT 73   TABULATED SOURCE FORCE DATA-IA95

(501240   (15 JUN 73)

AMES 97-707 IA9 O2A + S3 + T9 EXTERNAL TANK

PARAMETRIC DATA

REFERENCE DATA

SREF = 2.4215 SQ.FT.   XMRF = 28.5395 IN.
LREF = 39.8495 IN.   YMRF = .0095 IN.
BREF = 39.8495 IN.   ZMRF = .0095 IN.
SCALE = .0350 SCALE

ALPHA =   4.000   CRERNC = .500
RUDER = -15.555   ELEVON = .300
RUDFLR =   .055

RUN NO. 364/ 0   RNL = 2.79   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV	ALPHA
1.555	-8.300	.27900	-.14200	.42700	.26100	.11770	-.11650	.29540	140.0000	4.00000
1.555	-6.280	.27900	-.14020	.42590	.26990	.07710	-.07990	.29990	140.0000	4.00000
1.555	-4.220	.27400	-.14340	.41990	.27070	.04500	-.09900	.14740	140.0000	3.99000
1.555	-.125	.26100	-.13320	.41300	.27420	-.01570	.01320	-.00970	140.0000	4.00000
1.555	3.995	.27600	-.14100	.42220	.27910	-.07890	.08500	-.17340	140.0000	4.01000
1.555	6.000	.27000	-.13690	.42900	.27900	-.10860	.10980	-.23640	140.0000	4.00000
1.555	8.040	.27900	-.13840	.43140	.27790	-.15110	.14650	-.32670	140.0000	4.00000
GRADIENT		.00024	.00030	.00035	.00103	-.01512	.01595	-.03890	-.00000	.00245

RUN NO. 375/ 0   RNL = 2.32   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV	ALPHA
2.000	-8.290	.23900	-.11750	.38070	.25670	.12590	-.14810	.35470	140.0000	3.93000
2.000	-6.290	.22100	-.11490	.38130	.25790	.09350	-.11300	.26680	140.0000	3.93000
2.000	-4.200	.21900	-.10190	.38200	.26140	.05290	-.06970	.17160	140.0000	3.92000
2.000	-.130	.22000	-.09810	.38620	.26560	-.01940	.02190	-.01640	140.0000	3.94000
2.000	3.995	.22990	-.10350	.38540	.26840	-.08950	.10990	-.20710	140.0000	3.94000
2.000	5.995	.23900	-.10480	.38660	.27350	-.12790	.14870	-.30270	140.0000	3.94000
2.000	8.040	.24700	-.12100	.38620	.26030	-.15680	.18240	-.33920	140.0000	3.94000
GRADIENT		.00123	-.00020	.00042	.00086	-.01746	.02191	-.04847	-.00000	.02245

DATE 05 OCT 73   TABULATED SOURCE FORCE DATA-1A98

(R50215)   (13 JUN 73)

AMES 97-707 1A9 O2A + S3 + T9 EXTERNAL TANK

PARAMETRIC DATA

ALPHA =   6.000   ORBINC =   .500
RUDDER = -15.000   ELEVON =   .020
RUDFLR =   .000

REFERENCE DATA

SREF = 2.4210 SQ.FT.   XMRP = 28.5500 IN.
LREF = 39.8490 IN.   YMRP =   .0000 IN.
BREF = 39.8490 IN.   ZMRP =   .0000 IN.
SCALE = .0000 SCALE

RUN NO. 365/ 0   RN/L =   2.62   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV	ALPHA
1.555	-8.320	.38400	-.19530	.42830	.26120	.12230	-.12090	.39100	140.0000	6.09000
1.555	-6.280	.39050	-.18990	.42660	.27000	.08960	-.07480	.21470	140.0000	6.09000
1.555	-4.230	.39590	-.19410	.42030	.26980	.04640	-.04830	.14590	140.0000	6.05000
-.555	-.120	.38100	-.18200	.41120	.27360	-.01560	.01360	-.01290	140.0000	6.06000
1.555	3.970	.39570	-.18780	.42150	.27740	-.07930	.07600	-.16740	140.0000	6.07000
1.555	6.030	.39010	-.18310	.42880	.27960	-.11440	.19290	-.23890	140.0000	6.07000
1.555	8.080	.39700	-.18790	.43470	.27840	-.15530	.14790	-.32810	140.0000	6.07000
1.555		-.00000	.00077	.00014	.00093	-.01533	.01516	-.03816	.00000	.55244

GRADIENT

RUN NO. 371/ 0   RN/L =   2.31   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV	ALPHA
2.000	-6.260	.34500	-.15890	.37830	.25570	.09990	-.11650	.26650	140.0000	5.97000
2.000	-4.210	.34500	-.15610	.38020	.26200	.05730	-.07240	.16930	140.0000	5.98000
2.000	-.130	.34500	-.15100	.38040	.26400	-.01760	.01590	-.01330	140.0000	5.98000
2.000	3.970	.35300	-.15260	.38380	.26720	-.09050	.10480	-.19990	140.0000	5.99000
2.000	6.020	.35600	-.15180	.38470	.27320	-.13110	.14710	-.29870	140.0000	5.99000
2.000	8.070	.37230	-.16480	.38510	.26940	-.15970	.17890	-.38470	140.0000	5.99000
2.000		.00122	.00043	.00014	.00064	-.01697	.02166	-.04902	.00000	.00367

GRADIENT

DATE 05 OCT 73   TABULATED SOURCE FORCE DATA-IA98

(R8C216)   (13 JUN 73)

AMES 97-707 IA9 O2A + S3 + T9 EXTERNAL TANK

PARAMETRIC DATA

REFERENCE DATA

SREF	=	2.4210 SQ.FT.	XMRP	=	28.5300 IN.
LREF	=	39.8490 IN.	YMRP	=	.0000 IN.
BREF	=	39.8490 IN.	ZMRP	=	.0000 IN.
SCALE	=	.0300 SCALE			

ALPHA	=	8.000	ORBINC	=	.900
RUDDER	=	-15.000	ELEVON	=	.000
RUDFLR	=	.000			

RUN NO. 368/ 0   RN/L =   2.80   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV	ALPHA
1.555	-8.350	.51800	-.24710	.42970	.26220	.12780	-.12430	.30600	140.00000	8.12000
1.555	-6.?	.51200	-.23950	.42710	.26970	.08340	-.07400	.21320	140.00000	8.11000
1.555	-4.?	.51800	-.24120	.42170	.26920	.04800	-.04640	.14250	140.00000	8.10000
1.555	-.110	.50200	-.22840	.41230	.27340	-.01540	.01280	-.01060	140.00000	8.11000
1.555	4.000	.51600	-.23200	.42050	.27480	-.07990	.06640	-.15560	140.00000	8.13000
1.555	6.060	.51500	-.22910	.43050	.28100	-.11770	.09950	-.23330	140.00000	8.14000
1.555	8.120	.52500	-.23450	.43700	.27870	-.16080	.15010	-.32990	140.00000	8.14000
GRADIENT		-.00025	.00112	-.00015	.00070	-.01552	.01393	-.03618	.00000	.00364

RUN NO. 372/ 0   RN/L =   2.31   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV	ALPHA
2.000	-8.340	.48600	-.22760	.37500	.30130	.13870	-.15020	.35720	140.00000	8.02000
2.000	-6.270	.47600	-.21280	.37690	.25730	.10190	-.11190	.26770	140.00000	8.02000
2.000	-4.220	.47210	-.20740	.38060	.26420	.05880	-.06610	.16990	140.00000	8.01000
2.000	-.120	.47000	-.19990	.38320	.26770	-.01970	.02210	-.01660	140.00000	8.03000
2.000	3.980	.47910	-.19960	.38410	.27030	-.09370	.10080	-.19620	140.00000	8.04000
2.000	6.050	.47600	-.19630	.38210	.27150	-.13570	.14260	-.29510	140.00000	8.04000
2.000	8.110	.49600	-.21100	.38130	.26890	-.16380	.17260	-.38080	140.00000	8.05000
GRADIENT		.00285	.00295	.00043	.00074	-.01857	.02033	-.04459	-.00000	.00565

DATE 05 OCT 73   TABULATED SOURCE FORCE DATA-1A9B

AMES 97-737 1A9 O2A + 33 + T9 EXTERNAL TANK

PARAMETRIC DATA

REFERENCE DATA

SREF = 2.4210 SQ.FT.   XMRP = 28.5300 IN.
LREF = 39.8450 IN.   YMRP = .0000 IN.
BREF = 39.8450 IN.   ZMRP = .0000 IN.
SCALE = .0300 SCALE

ALPHA = -8.000   ORBINC = .900
RUDDER = -10.000 ELEVON = .000
RUDFLR = .000

RUN NO. 373/ 0   RNL = 2.80   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV	ALPHA
1.555	-8.410	-.53490	.24040	.42010	.24840	.09730	-.13950	.34160	140.00000	-8.39000
1.555	-6.380	-.55690	.23440	.41320	.24710	.06430	-.09390	.25140	140.00000	-8.39000
1.555	-4.390	-.56400	.23150	.41700	.24860	.04590	-.06980	.16010	140.00000	-8.39000
1.555	-.180	-.57400	.21030	.41920	.25570	-.01190	.00860	-.00200	140.00000	-8.40000
1.555	3.930	-.56400	.21740	.42170	.25960	-.06900	.08820	-.18970	140.00000	-8.41000
1.555	3.930	-.55900	.21040	.42240	.26010	-.08580	.11830	-.26910	140.00000	-8.42000
1.555	5.990	-.55500	.20520	.42310	.25720	-.11720	.15690	-.35680	140.00000	-8.42000
.555	8.090	-.00000	-.00171	.00057	.00131	-.01406	.01908	-.04481	-.00000	-.00243
GRADIENT										

RUN NO. 379/ 0   RNL = 2.51   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV	ALPHA
2.000	-8.380	-.53700	.23620	.37750	.24310	.09910	-.15100	.36720	140.00000	-8.36000
2.000	-6.330	-.54000	.23340	.37960	.24760	.06640	-.11220	.27180	140.00000	-8.35000
2.000	-4.280	-.55900	.23650	.38260	.00000	.03820	-.06760	.17410	140.00000	-8.34000
2.000	-.170	-.55500	.22930	.38510	.25310	-.01160	.01350	-.01530	140.00000	-8.36000
2.000	3.930	-.55500	.21630	.38470	.24970	-.06260	.09790	-.21070	140.00000	-8.38000
2.000	3.930	-.55500	.20390	.38700	.25530	-.09260	.14680	-.31730	140.00000	-8.39000
2.000	5.980	-.54800	.19520	.38430	.25290	-.12420	.18980	-.41920	140.00000	-8.40000
2.000	8.040	-.00061	-.00246	.00026	.03043	-.01228	.02016	-.04687	.00000	-.00407
GRADIENT										

DATE 05 OCT 73   TABULATED SOURCE FORCE DATA-1A9B

(RBC#18)   (13 JUN 73)

AMES 97-707 1A9 O2A + S3 + T9 EXTERNAL TANK

PARAMETRIC DATA

ALPHA =   -4.000   ORBINC =   .900
RUDDER = -10.000   ELEVON =   .000
RUDFLR =   .000

REFERENCE DATA

SREF	=	2.4210 SQ.FT.	XMRP	=	28.5500 IN.
LREF	=	39.8490 IN.	YMRP	=	.0000 IN.
BREF	=	39.8490 IN.	ZMRP	=	.0000 IN.
SCALE	=	.0300 SCALE			

RUN NO. 374/ 0   RNVL = 2.60   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV	ALPHA
1.555	-6.340	-.25800	.10520	.42900	.25430	.10350	-.12200	.31020	140.00000	-4.29000
1.555	-6.300	-.26020	.10320	.42020	.25640	.06820	-.07380	.21670	140.00000	-4.24000
1.555	-4.250	-.26420	.09960	.41830	.25890	.04780	-.05680	.15980	140.00000	-4.24000
1.555	-.180	-.27420	.10510	.41880	.26360	-.01170	.03370	-.01090	140.00000	-4.26000
1.555	-.180	-.27020	.09490	.42230	.26920	-.07100	.08340	-.17990	140.00000	-4.26000
1.555	3.930	-.27020	.08680	.42540	.26930	-.08890	.10120	-.24340	140.00000	-4.26000
1.555	5.980	-.26100	.08220	.42830	.26790	-.12270	.14090	-.33090	140.00000	-4.27000
1.555	8.020	-.25900	-.00062	.00049	.00126	-.01452	.01714	-.04101	-.00000	-.00244
GRADIENT		-.00073								

RUN NO. 380/ 0   RNVL = 2.30   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV	ALPHA
2.030	-8.320	-.25800	.10680	.37810	.24690	.10770	-.13630	.34080	140.00000	-4.26000
2.030	-6.270	-.26800	.11310	.38130	.24290	.07820	-.10320	.25320	140.00000	-4.25000
2.030	-4.290	-.27800	.11780	.38250	.24890	.04850	-.06290	.16360	140.00000	-4.25000
2.030	-.180	-.27930	.11500	.38470	.25390	-.01880	.01380	-.01210	140.00000	-4.26000
2.030	-.180	-.27970	.10550	.38670	.25860	-.06970	.09600	-.19930	140.00000	-4.27000
2.030	3.920	-.26900	.09190	.38900	.26520	-.10190	.13800	-.30000	140.00000	-4.29000
2.030	5.960	-.26100	.07590	.38450	.26100	-.12960	.17450	-.39700	140.00000	-4.29000
2.030	8.010	-.00037	-.00151	.00052	.00121	-.01450	.01950	-.04453	.00000	-.00123
GRADIENT		-.00037								

DATE 05 OCT 73   TABULATED SOURCE FORCE DATA-1A9B

AMES 97-T07 IA9 O2A + S3 + T9 EXTERNAL TANK   (RB0Z19)   (13 JUN 73)

REFERENCE DATA

SREF = 2.4210 SQ.FT.   XMRP = 28.5300 IN.
LREF = 39.8490 IN.   YMRP = .0000 IN.
BREF = 39.8490 IN.   ZMRP = .0000 IN.
SCALE = .0300 SCALE

PARAMETRIC DATA

ALPHA =   .000   ORBINC =   .500
RUDDER = -10.000   ELEVON =   .000
RUDFLR =   .000

RUN NO. 373/ 0   RNVL = 2.79   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV	ALPHA
1.355	-8.320	.01600	-.02280	.42570	.26130	.11610	-.12210	.30300	140.00000	-.12000
1.355	-6.270	.01400	-.02040	.42210	.26710	.07550	-.07080	.20960	140.00000	-.12000
1.355	-4.240	.01900	-.02340	.41470	.26520	.05160	-.05630	.15380	140.00000	-.12000
1.355	-.140	.00100	-.01490	.41480	.26800	-.01140	.01460	-.01350	140.00000	-.12000
1.355	3.959	.01600	-.02960	.41670	.27720	-.07290	.07970	-.17390	140.00000	-.12000
1.355	5.990	.01700	-.02960	.42540	.27820	-.09660	.09180	-.23130	140.00000	-.12000
1.355	8.040	.02100	-.03520	.43010	.27340	-.13590	.13790	-.32200	140.00000	-.13000
GRADIENT		.00012	-.00051	.00049	.00146	-.01520	.01661	-.04001	-.00000	.00000

RUN NO. 381/ 0   RNVL = 2.31   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV	ALPHA
2.000	-8.300	-.00470	-.01120	.37960	.25240	.12300	-.14290	.35080	140.00000	-.16000
2.000	-6.280	-.01800	.00090	.38160	.25070	.08990	-.10640	.26070	140.00000	-.16000
2.000	-4.220	-.02700	.00720	.38160	.25470	.05210	-.06340	.16500	140.00000	-.16000
2.000	-.140	-.03600	.01340	.38350	.25790	-.01330	.02380	-.02990	140.00000	-.16000
2.000	3.930	-.02200	-.00090	.38410	.26700	-.07550	.10260	-.20530	140.00000	-.16000
2.000	5.980	-.01800	-.00810	.38500	.27080	-.11090	.14110	-.30070	140.00000	-.17000
2.000	8.020	-.00700	-.02540	.38340	.26480	-.13930	.17740	-.39470	140.00000	-.17000
GRADIENT		.00061	-.00099	.00031	.00151	-.01566	.02037	-.04544	-.00000	.00000

DATE 05 OCT 73   TABULATED SOURCE FORCE DATA-1498   (RBO2ED)   (13 JUN 73)

AMES 97-707 IA9 O2A + S3 + T9 EXTERNAL TANK

PARAMETRIC DATA

REFERENCE DATA

SREF = 2.4210 SQ.FT.   XMRP = 28.5300 IN.
LREF = 39.8490 IN.   YMRP = .0000 IN.
BREF = 39.8490 IN.   ZMRP = .0000 IN.
SCALE = .0300 SCALE

ALPHA = 4.000   ORBINC = .500
RUDDER = -10.000   ELEVON = .000
RUDFLR = .000

RUN NO. 378/ 0   RNVL = 2.80   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV	ALPHA
1.555	-8.300	.26900	-.14050	.42660	.26240	.12500	-.12190	.30090	140.00000	4.00000
1.555	-6.270	.27100	-.14010	.42340	.27100	.08990	-.07380	.21290	140.00000	4.00000
1.555	-4.220	.27800	-.14590	.41970	.27190	.05170	-.03460	.15190	140.00000	4.00000
1.555	-.130	.28700	-.13780	.41190	.27560	-.00060	.00790	-.00420	140.00000	4.02000
1.555	3.960	.28200	-.14440	.42150	.27910	-.07070	.07500	-.16590	140.00000	4.01000
1.555	6.010	.28100	-.14300	.42990	.27930	-.10190	.09440	-.23170	140.00000	4.01000
1.555	8.080	.28100	-.14380	.43170	.27560	-.14510	.14330	-.32620	140.00000	4.01000
GRADIENT		.00049	.00018	.00022	.00088	-.01496	.01584	-.03884	.0000	.00244

RUN NO. 382/ 0   RNVL = 2.33   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV	ALPHA
2.000	-8.280	.23000	-.11650	.38010	.25590	.13080	-.14650	.35120	140.00000	3.92000
2.000	-6.240	.21700	-.10380	.38030	.25560	.09750	-.11110	.26240	140.00000	3.92000
2.000	-4.200	.21900	-.10260	.38110	.25980	.05710	-.06790	.16750	140.00000	3.92000
2.000	-.130	.21400	-.09600	.38470	.26900	-.01360	.02190	-.02060	140.00000	3.94000
2.000	3.950	.22600	-.10240	.38260	.26670	-.08240	.10720	-.20800	140.00000	3.93000
2.000	5.990	.22800	-.10450	.38350	.27000	-.12040	.14470	-.30180	140.00000	3.93000
2.000	8.040	.24700	-.12220	.38200	.26670	-.14920	.17810	-.39270	140.00000	3.93000
GRADIENT		.00135	-.00022	.00018	.00085	-.01712	.02144	-.04607	.00000	.00245

AMES 97-707 1A9 O2A + S3 + T9 EXTERNAL TANK

     (RDO22I)   (13 JUN 73)

REFERENCE DATA

SREF =	2.4210 SQ.FT.	XMRP =	28.5300 IN.
LREF =	39.0490 IN.	YMRP =	.0000 IN.
BREF =	39.0490 IN.	ZMRP =	.0000 IN.
SCALE =	.0390 SCALE		

PARAMETRIC DATA

ALPHA =	6.000	ORBINC =	.500
RUDDER =	-10.000	ELEVON =	.000
RUDFLR =	.000		

RUN NO. 377/ 0   RNVL = 2.80   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV	ALPHA
1.355	-8.330	.39350	-.19570	.42860	.26210	.13130	-.12690	.30740	140.00000	6.06000
1.355	-6.290	.39120	-.19150	.42690	.26940	.08720	-.07610	.21390	140.00000	6.09000
1.355	-4.230	.39600	-.19640	.42190	.27240	.03550	-.05490	.15140	140.00000	6.06000
1.355	-.120	.30600	-.18640	.41000	.27390	-.00600	.00620	-.00430	140.00000	6.07000
1.355	3.980	.40600	-.19640	.42170	.27750	-.07030	.06800	-.15900	140.00000	6.07000
1.355	6.040	.40000	-.18690	.42640	.27870	-.10340	.09490	-.23120	140.00000	6.07000
1.355	8.110	.40400	-.19180	.43310	.27760	-.14920	.14500	-.32780	140.00000	6.07000
GRADIENT		.00097	.00000	.00002	.00060	-.01508	.01492	-.03781	.00000	.00244

RUN NO. 303/ 0   RNVL = 2.31   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV	ALPHA
2.000	-8.310	.36000	-.17290	.37760	.25600	.13710	-.14640	.35120	140.00000	5.97000
2.000	-6.260	.34700	-.15860	.38060	.25670	.10210	-.10990	.26230	140.00000	5.97000
2.000	-4.210	.34200	-.15470	.38240	.26290	.05930	-.06570	.16520	140.00000	5.96000
2.000	-.120	.34100	-.15070	.38210	.26680	-.01410	.02140	-.02210	140.00000	5.98000
2.000	3.970	.35000	-.15220	.38320	.26710	-.08570	.10720	-.20670	140.00000	5.99000
2.000	6.020	.35400	-.15180	.38280	.26940	-.12510	.14480	-.30130	140.00000	5.99000
2.000	8.070	.37000	-.16670	.38150	.26530	-.15200	.17470	-.38640	140.00000	5.99000
GRADIENT		.00098	.00031	.00010	.00051	-.01773	.02114	-.04546	-.00000	.00367

DATE 23 OCT 73   TABULATED SOURCE FORCE DATA-1A9B

(RBD222)   (13 JUN 73)

AMES 97-707 1A9 O2A + S3 + T9 EXTERNAL TANK

PARAMETRIC DATA

REFERENCE DATA

SREF	=	2.4210 SQ.FT.	XMRP	=	28.5300 IN.
LREF	=	39.8490 IN.	YMRP	=	.0000 IN.
BREF	=	39.8490 IN.	ZMRP	=	.0000 IN.
SCALE	=	.0300 SCALE			

ALPHA	=	8.000	ORBINC	=	.900
RUDDER	=	-10.000	ELEVON	=	.000
RUDFLR	=	.000			

RUN NO. 378/ 0   RN/L = 2.60   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV	ALPHA
1.555	-8.360	.52000	-.24860	.43040	.26240	.13600	-.12940	.31190	140.00000	8.12000
1.555	-6.310	.51500	-.24125	.42790	.26650	.09070	-.07730	.21610	140.00000	8.12000
1.555	-4.230	.52000	-.24340	.42220	.26690	.05480	-.04910	.14420	140.00000	8.12000
1.555	-.110	.50600	-.23150	.41210	.27280	-.00650	.00770	-.00560	140.00000	8.13000
1.555	-.110	.52600	-.23740	.42050	.27370	-.07170	.06490	-.15340	140.00000	8.15000
1.555	3.940	.52400	-.23410	.42900	.27960	-.10720	.09290	-.22750	140.00000	8.15000
1.555	6.080	.52400	-.23750	.42900	.27770	-.15100	.14320	-.32500	140.00000	8.15000
1.555	8.120	.53000	-.23750	.43440	.27770	-.15100	.14320	-.32500	140.00000	8.15000
	GRADIENT	.00072	.00074	-.00021	.00063	-.01548	.01395	-.03643	.0000	.00367

RUN NO. 384/ 0   RN/L = 2.31   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV	ALPHA
2.000	-8.350	.48300	-.22630	.37590	.25930	.14230	-.14500	.35050	140.00000	8.02000
2.000	-6.280	.47200	-.21070	.37790	.25730	.10520	-.10640	.26000	140.00000	8.02000
2.000	-4.220	.47000	-.20630	.38140	.26390	.06200	-.06160	.16120	140.00000	8.01000
2.000	-.110	.46700	-.19950	.38250	.26850	-.01430	.02270	-.02260	140.00000	8.03000
2.000	-.110	.47500	-.19920	.38240	.26780	-.08750	.09960	-.19980	140.00000	8.04000
2.000	4.020	.47600	-.19650	.38070	.26820	-.12840	.14010	-.29640	140.00000	8.04000
2.000	6.050	.47600	-.21310	.37990	.26630	-.15590	.16960	-.37930	140.00000	8.04000
2.000	8.110	.49600	-.21310	.37990	.26630	-.15590	.16960	-.37930	140.00000	8.04000
	GRADIENT	.00361	.00288	.00012	.00044	-.01819	.01961	-.04592	.00000	.00365

TABULATED SOURCE FORCE DATA-1A98

AMES 97-727 IA9 O2A + S3 + T9 EXTERNAL TANK   (RB0223)   (13 JUN 73)

REFERENCE DATA

SREF = 2.4210 SQ.FT.	XMRP = 26.5300 IN.	
LREF = 39.0490 IN.	YMRP = .0000 IN.	
BREF = 39.0490 IN.	ZMRP = .0000 IN.	
SCALE = .0300 SCALE		

PARAMETRIC DATA

ALPHA = -8.000	ORBINC = .900
RUDDER = 15.000	ELEVON = .000
RUDFLR = .000	

RUN NO. 385/ 0   RN/L = 2.90   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV	ALPHA
1.555	-8.400	-.55800	.24640	.42660	.29090	.12920	-.16990	.37190	140.00000	-8.36000
1.555	-6.360	-.56100	.23960	.42180	.25060	.09740	-.12590	.28240	140.00000	-8.36000
1.555	-4.290	-.57200	.23850	.42140	.24850	.06010	-.09690	.20860	140.00000	-8.37000
1.555	-.170	-.56000	.23610	.42450	.25520	.02200	-.02160	.02580	140.00000	-8.36000
1.555	3.940	-.57000	.22020	.42340	.29990	-.03590	.05710	-.16030	140.00000	-8.40000
1.555	8.060	-.56000	.20620	.42570	.25600	-.06370	.12570	-.32780	140.00000	-8.42000
GRADIENT		.00024	-.00222	.00024	.00139	-.01409	.01691	-.04482	.00000	-.00364

RUN NO. 991/ 0   RN/L = 2.31   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV	ALPHA
2.000	-8.360	-.53900	.24030	.38120	.24590	.12700	-.17980	.39890	140.00000	-8.36000
2.000	-6.330	-.54300	.23790	.38320	.24550	.09640	-.14140	.30270	140.00000	-8.35000
2.000	-4.280	-.55200	.24030	.38640	.25170	.06830	-.09800	.20640	140.00000	-8.34000
2.000	-.170	-.55800	.23210	.38750	.25320	.01720	-.01300	.01430	140.00000	-8.36000
2.000	3.930	-.55500	.21670	.38720	.25300	-.03480	.07260	-.18180	140.00000	-8.38000
2.000	5.980	-.54870	.20250	.38870	.25690	-.06580	.12300	-.29140	140.00000	-8.39000
2.000	8.040	-.54800	.19440	.38670	.25990	-.10190	.17030	-.40220	140.00000	-8.41000
GRADIENT		-.00037	-.00287	.00010	.00016	-.01256	.02078	-.04728	.00000	-.00487

DATE 03 OCT 73   TABULATED SOURCE FORCE DATA-1A9B

(RB0224)   (13 JUN 73)

AMES 97-707 1A9 O2A + S3 + T9 EXTERNAL TANK

PARAMETRIC DATA

REFERENCE DATA

SREF =	2.4210 SQ.FT.	XMRP =	28.5300 IN.
LREF =	39.8490 IN.	YMRP =	.0000 IN.
BREF =	39.8490 IN.	ZMRP =	.0000 IN.
SCALE =	.0300 SCALE		

ALPHA =	-4.000	ORBINC =	.500
RUDDER =	15.000	ELEVON =	.000
RUDFLR =	.000		

RUN NO. 386/ 0   RNVL = 2.80   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV	ALPHA
1.555	-8.330	-.25900	.10940	.42850	.25700	.13360	-.15110	.33820	140.00000	-4.25000
1.555	-6.290	-.25900	.10610	.42320	.26000	.10160	-.10560	.24880	140.00000	-4.24000
1.555	-4.240	-.26300	.10240	.41900	.25990	.08150	-.08860	.18790	140.00000	-4.24000
1.555	-.150	-.27300	.10690	.42280	.26470	.02190	-.01890	.02180	140.00000	-4.26000
1.555	3.940	-.26600	.09450	.42250	.26920	-.03870	.05050	-.14530	140.00000	-4.26000
1.555	5.980	-.26000	.08740	.42440	.27070	-.05550	.06650	-.20800	140.00000	-4.26000
1.555	8.030	-.26000	.08260	.42620	.26650	-.09190	.10900	-.29800	140.00000	-4.27000
GRADIENT		-.00037	-.00097	.00043	.00114	-.01469	.01700	-.04073	-.00000	-.00244

RUN NO. 392/ 0   RNVL = 2.31   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV	ALPHA
2.000	-8.310	-.26100	.11140	.38200	.25030	.13270	-.16090	.36760	140.00000	-4.25000
2.000	-6.270	-.26700	.11540	.38470	.24700	.10550	-.12640	.27690	140.00000	-4.25000
2.000	-4.250	-.27700	.12090	.38510	.24970	.07350	-.08700	.18690	140.00000	-4.24000
2.000	-.160	-.28000	.11650	.38520	.25370	.01570	-.01140	.01140	140.00000	-4.25000
2.000	3.920	-.28000	.10670	.38570	.25670	-.04360	.06770	-.17080	140.00000	-4.26000
2.000	5.960	-.27100	.09250	.38850	.26290	-.07590	.11150	-.27060	140.00000	-4.27000
2.000	8.010	-.26100	.07670	.38510	.26130	-.10760	.15260	-.37060	140.00000	-4.26000
GRADIENT		-.00037	-.00174	.00007	.00086	-.01437	.01898	-.04389	-.00000	-.00245

DATE 03 OCT 73   TABULATED SOURCE FORCE DATA-IA98

(RS0225)   (13 JUN 73)

AMES 97-717 IA9 OEA + S3 + T9 EXTERNAL TANK

PARAMETRIC DATA

REFERENCE DATA

SREF = 2.4210 SQ.FT.	XMRP =	28.5300 IN.
LREF = 39.6690 IN.	YMRP =	.0000 IN.
BREF = 39.6690 IN.	ZMRP =	.0000 IN.
SCALE = .0300 SCALE		

ALPHA =   .000   ORBINC =   .500
RUDDER = 15.000   ELEVON =   .000
RUDFLR =   .000

RUN NO. 3877/ 0   RN/L = 2.80   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV	ALPHA
1.555	-8.320	.01600	-.01770	.42940	.28480	.14790	-.15160	.33440	140.00000	-.12000
1.555	-6.270	.01200	-.01680	.42280	.26770	.10820	-.10240	.24170	140.00000	-.12000
1.555	-4.240	.01300	-.02140	.41530	.26780	.08380	-.08700	.18500	140.00000	-.12000
1.555	-.130	.00100	-.01290	.41600	.26690	.02000	-.01610	.01790	140.00000	-.12000
1.555	3.950	.01500	-.02830	.41960	.27890	-.04150	.04810	-.14150	140.00000	-.12000
1.555	5.990	.01400	-.02650	.42480	.27870	-.06540	.06200	-.19970	140.00000	-.12000
1.555	8.040	.01800	-.03250	.42800	.27260	-.10610	.11020	-.29390	140.00000	-.13000
1.555	GRADIENT	.00024	-.00084	.00052	.00135	-.01530	.01650	-.03987	-.00000	.00000

RUN NO. 3937/ 0   RN/L = 2.32   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV	ALPHA
2.000	-8.290	-.00600	-.00760	.38100	.25320	.14010	-.15970	.36020	140.00000	-.16000
2.000	-6.290	-.01600	.00340	.38060	.25290	.10940	-.12890	.27440	140.00000	-.16000
2.000	-4.210	-.02400	.00830	.38140	.25500	.07520	-.09040	.18630	140.00000	-.16000
2.000	-.140	-.03200	.01320	.38220	.25760	.01270	-.00900	.00700	140.00000	-.16000
2.000	3.950	-.02100	-.00290	.37390	.25380	-.06580	.09110	-.21250	140.00000	-.16000
2.000	6.020	-.00200	-.02600	.38340	.26410	-.11970	.15720	-.36920	140.00000	-.17000
2.000	GRADIENT	.00037	-.00133	-.00092	-.00015	-.01728	.02224	-.04898	-.00000	.00000

DATE 23 OCT 73   TABULATED SOURCE FORCE DATA-1A98

(RB0226)   (13 JUN 73)

AMES 9x7 T97 IA9 O2A + S3 + T9 EXTERNAL TANK

PARAMETRIC DATA

REFERENCE DATA

SREF = 2.4210 SQ.FT.	YMRP = 26.5300 IN.	
LREF = 39.8490 IN.	YMRP = .0000 IN.	
BREF = 39.8490 IN.	ZMRP = .0000 IN.	
SCALE = .0300 SCALE		

ALPHA = 4.000   ORBINC = .900
RUDDER = 15.000   ELEVON = .000
RUDFLR = .000

RUN NO. 386/ 0   RNVL = 2.00   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV	ALPHA
1.555	-8.300	.26490	-.13480	.43920	.26610	.15430	-.15000	.32930	140.00000	4.00000
1.555	-6.260	.26400	-.13450	.42600	.27340	.11460	-.10350	.24240	140.00000	4.00000
1.555	-4.220	.27200	-.14050	.41890	.27290	.08270	-.08380	.18060	140.00000	4.00000
1.555	-.120	.26290	-.13330	.41200	.27590	.02060	-.01900	.02280	140.00000	4.01000
1.555	3.960	.28000	-.14290	.42300	.28180	-.04140	.04630	-.13630	140.00000	4.01000
1.555	6.010	.27800	-.14010	.43010	.28010	-.07310	.06790	-.20420	140.00000	4.01000
1.555	8.050	.28100	-.14310	.43070	.27620	-.11570	.11420	-.29510	140.00000	4.01020
1.555	GRADIENT	.00098	-.00029	.00050	.00114	-.01517	.01590	-.03874	-.00000	.00122

RUN NO. 394/ 0   RNVL = 2.31   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV	ALPHA
2.000	-8.260	.22700	-.11290	.38120	.25920	.14780	-.16360	.36080	140.00000	3.92000
2.000	-6.230	.21700	-.10140	.37980	.25640	.11690	-.13190	.27920	140.00000	3.92000
2.000	-4.200	.21900	-.09960	.37940	.25850	.07900	-.09310	.18670	140.00000	3.91000
2.000	-.120	.21500	-.09690	.38210	.26060	.01180	-.00970	.00940	140.00000	3.93000
2.000	-.120	.22500	-.10170	.38150	.26340	-.05860	.07910	-.17530	140.00000	3.93000
2.000	3.950	.22500	-.10360	.38340	.26670	-.09820	.12070	-.27150	140.00000	3.93000
2.000	5.990	.22600	-.12010	.38380	.26440	-.13050	.19920	-.36680	140.00000	3.93000
2.000	8.030	.24400	-.00026	.00026	.00060	-.01688	.02113	-.04442	-.00000	.00245
2.000	GRADIENT	.00123								

DATE 05 OCT 73   TABULATED SOURCE FORCE DATA-1A98

AMES 97-737 IA9 O2A + S3 + T9 EXTERNAL TANK   (R80237) (13 JUN 73)

REFERENCE DATA

				PARAMETRIC DATA	
SREF =	2.4210 SQ.FT.	XMRP =	28.5500 IN.	ALPHA =	6.000
LREF =	39.0490 IN.	YMRP =	.0000 IN.	RUDDER =	15.000
BREF =	39.0490 IN.	ZMRP =	.0000 IN.	RUDFLR =	.000
SCALE =	.0300 SCALE				

ORBINC = .500
ELEVON = .000

RUN NO. 309/ 0   RN/L = 2.79   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV	ALPHA
1.555	-8.330	.39100	-.19190	.43280	.26570	.15890	-.15320	.33280	140.0000	6.06000
1.555	-6.270	.38400	-.18580	.42710	.27200	.11600	-.10670	.24470	140.0000	6.05000
1.555	-4.230	.39100	-.19110	.42030	.27160	.08430	-.08340	.16070	140.0000	6.06000
1.555	-.110	.38220	-.18240	.41120	.27390	.02020	-.01870	.02070	140.0000	6.07000
1.555	3.990	.39600	-.19000	.42250	.27790	-.04370	.04410	-.13480	140.0000	6.07000
1.555	6.030	.39700	-.18680	.42950	.27980	-.07840	.06930	-.20530	140.0000	6.07000
1.555	8.090	.40300	-.19120	.43270	.27810	-.12070	.11560	-.29600	140.0000	6.07000
GRADIENT		.00365	.00014	.00024	.00077	-.01557	.01551	-.03838	.0000	.00243

RUN NO. 395/ 0   RN/L = 2.31   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV	ALPHA
2.000	-8.300	.35400	-.16970	.37740	.25780	.15360	-.16330	.36010	140.0000	5.98000
2.000	-6.290	.34200	-.15610	.37870	.25730	.12190	-.13320	.27670	140.0000	5.97000
2.000	-4.200	.34100	-.15470	.38030	.26080	.08160	-.09330	.18610	140.0000	5.96000
2.000	-.120	.34300	-.15170	.37910	.26340	.01110	-.01010	.01020	140.0000	5.98000
2.000	3.970	.35200	-.15260	.38230	.26370	-.06270	.07890	-.17340	140.0000	5.99000
2.000	6.030	.35500	-.15230	.38340	.26920	-.10440	.12170	-.27270	140.0000	5.99000
2.000	8.070	.36900	-.16550	.38280	.26490	-.13440	.15710	-.36240	140.0000	5.99000
GRADIENT		.00135	.00026	.00025	.00035	-.01766	.02103	-.04690	.0000	.00587

DATE 05 OCT 73   TABULATED SOURCE FORCE DATA-IA98

(RD0228)   (13 JUN 73)

AMES 97-737 IA9 O2A + S3 + T9 EXTERNAL TANK

REFERENCE DATA   PARAMETRIC DATA

SREF =   2.4210 SQ.FT.   XMRF =   28.5390 IN.   ALPHA =   8.000   OBSTNK =   .900
LREF = 39.0490 IN.   YMRF =   .0000 IN.   ELVSER =   15.000   ELEVON =   .700
BREF = 39.0490 IN.   ZMRF =   .0000 IN.   RUDFLR =   .000
SCALE =   .0300 SCALE

RUN NO. 390/ 0   RN/L = 2.60   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV	ALPHA
1.555	-8.350	.51600	-.24410	.43420	.26590	.16200	-.15600	.33710	140.00000	8.12000
1.555	-6.300	.51000	-.23670	.42900	.27060	.12110	-.10720	.24650	140.00000	8.12000
1.555	-4.200	.51600	-.23900	.42130	.27050	.08600	-.08010	.17620	140.00000	8.11000
1.555	-.110	.50500	-.22890	.41270	.27450	.02080	-.01940	.02150	140.00000	8.12000
1.555	4.000	.52100	-.23410	.42250	.27810	-.04560	.03970	-.12840	140.00000	8.14000
1.555	6.060	.51900	-.23080	.42990	.27990	-.08070	.06740	-.20290	140.00000	8.16000
1.555	8.130	.52800	-.23630	.43340	.27810	-.12450	.11760	-.28690	140.00000	8.18000
1.555	GRADIENT	.00661	.00060	.00014	.00080	-.01599	.01455	-.03731	.00000	.00064

RUN NO. 396/ 0   RN/L = 2.32   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV	ALPHA
2.000	-8.320	.47700	-.22010	.37510	.25890	.15890	-.16290	.35890	140.00000	8.02000
2.000	-6.260	.47100	-.21020	.37650	.25720	.12500	-.12950	.27400	140.00000	8.01000
2.000	-4.210	.47000	-.21710	.37890	.26260	.08450	-.08920	.18290	140.00000	8.01000
2.000	-.110	.46900	-.22090	.38090	.26480	.01070	-.00840	.00740	140.00000	8.05000
2.000	3.990	.47700	-.19960	.38110	.26430	-.06310	.07090	-.16460	140.00000	8.04000
2.000	6.050	.47800	-.19730	.37990	.26760	-.10690	.11460	-.26500	140.00000	8.04000
2.000	8.110	.49500	-.21170	.38070	.26590	-.13780	.16990	-.15390	140.00000	8.04000
2.000	GRADIENT	.00085	.00091	.00027	.00021	-.01800	.01941	-.04233	.00000	-.00368

DATE 30 OCT 73   TABULATED SOURCE FORCE DATA-IA9C

PAGE e.

AMES 97-737 IA9 O2A + S3 + T9 ORBITER

REFERENCE DATA

PARAMETRIC DATA

SREF =	2.4210 SQ.FT.	XMRP = 28.5350 IN.
LREF =	39.8450 IN.	YMRP = .0000 IN.
BREF =	39.8450 IN.	ZMRP = .0000 IN.
SCALE =	.0300 SCALE	

BETA = .000   ORBINC = .900
RUDDER = .900   R.HMON = .000
RUDFLR = .000

RUN NO. 260/ 0   RNVL = 1.51   GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CLM	CAF	CBL	CYN	CY
2.498	-7.600	-.07900	.08363	.10580	.00005	-.00030	.00010
2.498	-5.570	-.04900	.06087	.09920	.00005	-.00020	.00010
2.498	-3.530	-.01400	.03525	.09160	.00005	-.00030	.00010
2.498	-1.520	.01800	.00922	.08610	-.00008	-.00020	-.00035
2.498	.510	.04900	-.01454	.08240	.00005	-.00020	-.00020
2.498	2.440	.08100	-.04019	.07910	-.00005	-.00020	-.00025
2.498	4.410	.12270	-.07294	.07620	-.00010	-.00010	-.00040
2.498	6.460	.16500	-.10584	.07430	.00005	-.00060	.00040
2.498	8.530	.20300	-.13618	.07220	.00005	-.00040	.00020
2.498	GRADIENT	.01690	-.01331	-.00191	-.00001	.00002	-.00005

RUN NO. 255/ 0   RNVL = 1.99   GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CLM	CAF	CBL	CYN	CY
2.999	-7.580	-.04700	.05697	.10670	.00008	-.00030	.00000
2.999	-5.610	-.02900	.04266	.09820	.00005	-.00020	.00010
2.999	-3.580	-.01100	.02744	.09340	-.00005	-.00010	-.00010
2.999	-1.520	.01000	.01131	.08410	-.00015	.00000	-.00020
2.999	.510	.03200	-.00632	.07860	-.00005	.00000	-.00060
2.999	2.430	.05900	-.02705	.07500	-.00016	.00020	-.00060
2.999	4.470	.09200	-.05066	.07150	-.00008	.00020	-.00030
2.999	6.500	.11900	-.07222	.06820	-.00008	.00000	-.00030
2.999	8.510	.13700	-.08774	.06580	.00015	-.00030	.00020
2.999	GRADIENT	.01252	-.00971	-.00234	-.00001	.00002	-.00004

RUN NO. 220/ 0   RNVL = 1.99   GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CLM	CAF	CBL	CYN	CY
3.502	-7.600	-.04400	.04923	.10580	-.00124	.00290	-.00010
3.502	-5.590	-.03300	.03985	.09660	-.00129	.00290	-.00020
3.502	-3.580	-.02200	.02942	.08800	-.00126	.00260	-.00410
3.502	-1.550	-.01700	.01975	.08120	-.00147	.00350	-.00490
3.502	.470	.00500	.00726	.07430	-.00126	.00240	-.00370
3.502	2.450	.03100	-.00961	.06920	-.00123	.00230	-.00360
3.502	4.460	.05700	-.02902	.06510	-.00121	.00230	-.00350
3.502	6.480	.07900	-.04531	.06090	-.00110	.00220	-.00310
3.502	8.510	.09200	-.05578	.05910	-.00097	.00170	-.00260
3.502	GRADIENT	.00957	-.00729	-.00289	.00002	-.00008	.00010

DATE 08 OCT 73   TABULATED SOURCE FORCE DATA-1A9C   (BBND22)   (15 SEP 73)

AMES B7-707 1A9 O2A + S3 + T9 ORBITER

PARAMETRIC DATA

REFERENCE DATA

SREF =	2.4210 SQ.FT.	XREF =	28.5300 IN.
LREF =	39.8490 IN.	YREF =	.0000 IN.
BREF =	39.8490 IN.	ZREF =	.0000 IN.
SCALE =	.0300 SCALE		

ALPHA =	-8.000
RUDDER =	.000
RUDFLR =	.000

ORBINC =	.900
ELEVON =	.000

RUN NO. 241/ 0   RNVL =   1.90   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
2.498	-8.480	-.05300	.05988	.10560	.06172	-.11290	.16290
2.498	-6.340	-.06600	.07231	.10570	.04484	-.08160	.13190
2.498	-4.210	-.07300	.07983	.10580	.02811	-.04960	.08140
2.498	-2.080	-.07800	.08574	.10620	.01356	-.02360	.03840
2.498	2.210	-.07800	.08487	.10710	-.01550	.02600	-.04590
2.498	2.210	-.07200	.07944	.10620	-.03068	.05570	-.09090
2.498	4.360	-.06500	.07050	.10530	-.04743	.08720	-.14090
2.498	6.520	-.05300	.05922	.10460	-.06468	.11800	-.19160
2.498	8.680	-.03300	.03139	.00208	-.00684	.01225	-.01998
	GRADIENT	.00019					

RUN NO. 231/ 0   RNVL =   2.00   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
2.999	-8.650	-.02900	.03383	.10850	.05813	-.11260	.18060
2.999	-6.470	-.04200	.04728	.10870	.04321	-.08330	.13310
2.999	-4.300	-.04700	.05413	.10810	.02813	-.05380	.08650
2.999	-2.120	-.04900	.05795	.10920	.01336	-.02530	.04110
2.999	2.250	-.04700	.05674	.10890	-.01516	.02860	-.04690
2.999	2.250	-.04500	.05338	.10870	-.02947	.05690	-.09090
2.999	4.450	-.03800	.04553	.10890	-.04438	.08580	-.13760
2.999	6.650	-.02100	.03139	.10910	-.05952	.11550	-.18560
2.999	8.870	-.02100	.00212	.00209	-.00658	.01255	-.02023
	GRADIENT	.00027					

RUN NO. 221/ 0   RNVL =   1.98   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
3.502	-8.790	-.02400	.02957	.10750	.05457	-.11020	.17690
3.502	-6.580	-.03600	.04052	.10790	.03993	-.08190	.12970
3.502	-4.370	-.04200	.04609	.10640	.02538	-.05220	.08360
3.502	-2.160	-.04500	.04817	.10670	.01179	-.02450	.03930
3.502	2.280	-.04400	.04861	.10650	-.01397	.02820	-.04580
3.502	2.280	-.04200	.04649	.10680	-.02759	.05620	-.09120
3.502	4.520	-.03500	.04000	.10720	-.04191	.08460	-.13620
3.502	6.760	-.02200	.02844	.10700	-.05590	.11190	-.18090
3.502	9.000	-.00200	.00206	.00203	-.00593	.01212	-.01947
	GRADIENT	.00024					

DATE 26 OCT 73   TABULATED SOURCE FORCE DATA-IA9C

AMES 87-707 IA9 OA + S3 + T9 ORBITER

(BBND3) (15 SEP 73)

PARAMETRIC DATA

REFERENCE DATA

SREF	=	2.4210 SQ.FT.	XMRP = 20.3900 IN.
LREF	=	39.6490 IN.	YMRP = .0000 IN.
BREF	=	39.6490 IN.	ZMRP = .0000 IN.
SCALE	=	.0090 SCALE	

ALPHA = -8.000   ORBINC = .500
RUDDER =   .000   ELEVON = .000
RUDFLR =   .000

RUN NO. 242/ 0 RN/L = 1.50 GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
2.498	-8.490	-.02490	.03707	.09900	.09906	-.10490	.17040
2.498	-6.340	-.03700	.04935	.09990	.04273	-.07320	.12160
2.498	-4.210	-.04500	.05737	.09940	.02659	-.04540	.07480
2.498	-2.080	-.04900	.06273	.10000	.01244	-.02070	.03410
2.498	2.200	-.04800	.06160	.09990	-.01518	.02650	-.04390
2.498	4.340	-.04300	.05615	.10010	-.02951	.05160	-.08450
2.498	6.500	-.03500	.04659	.09910	-.04596	.08210	-.13290
2.498	8.650	-.02200	.03464	.09690	-.06265	.11250	-.18300
2.498		.00023	-.00017	.02206	-.01654	.01128	-.01853
	GRADIENT						

RUN NO. 232/ 0 RN/L = 2.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
2.999	-8.660	-.00200	.01596	.10090	.05577	-.10560	.17020
2.999	-6.490	-.01800	.03014	.10080	.04111	-.07750	.12460
2.999	-4.310	-.02600	.03848	.10060	.02700	-.05020	.08100
2.999	-2.120	-.03000	.04316	.10150	.01290	-.02340	.03820
2.999	2.240	-.02900	.04211	.10070	-.01422	.02590	-.04210
2.999	4.420	-.02500	.03736	.10090	-.02813	.05190	-.08420
2.999	6.630	-.01600	.02836	.10130	-.04247	.07960	-.12830
2.999	8.820	.00000	.01438	.10020	-.05694	.10800	-.17450
	GRADIENT	.00014	-.00015	.00004	-.01628	.01158	-.01879

RUN NO. 222/ 0 RN/L = 1.99 GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
3.502	-8.810	-.01100	.02208	.10160	.05290	-.10560	.17010
3.502	-6.590	-.02600	.03268	.10020	.03856	-.07800	.12490
3.502	-4.370	-.03300	.03915	.09930	.02465	-.05050	.08060
3.502	-2.160	-.03200	.04004	.09890	.01169	-.02410	.03890
3.502	2.280	-.03300	.04209	.09830	-.01314	.02560	-.04220
3.502	4.500	-.03100	.03779	.09910	-.02615	.05200	-.08390
3.502	6.740	-.02400	.03102	.09880	-.03961	.07860	-.12790
3.502	8.970	-.01000	.01856	.09860	-.05317	.10540	-.17150
3.502		.00014	-.00011	-.00003	-.00572	.01148	-.01849
	GRADIENT						

DATE 08 OCT 73   TABULATED SOURCE FORCE DATA-1A9C

(BBND04)   (15 SEP 73)

AMES 87-707 1A9 O2A + S3 + T9 ORBITER

REFERENCE DATA

SREF = 2.4210 SQ.FT.   XMRP = 28.5300 IN.
LREF = 39.8490 IN.   YMRP = .0000 IN.
BREF = 39.8490 IN.   ZMRP = .0000 IN.
SCALE = .0350 SCALE

PARAMETRIC DATA

ALPHA = -4.000   ORBINC = .900
RUDDER = .000   ELEVON = .000
RUDFLR = .000

RUN NO. 243/ 0   RNVL = 1.50   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
2.498	-8.520	-.01800	.01191	.09220	.05745	-.09940	.16180
2.498	-6.360	-.00600	.02904	.09310	.04185	-.07170	.11630
2.498	-4.220	-.01600	.03379	.09290	.02609	-.04390	.07170
2.498	-2.090	-.01900	.03798	.09280	.01225	-.01970	.03860
2.498	2.220	-.01800	.03706	.09280	-.01525	.02600	-.04340
2.498	2.220	-.01300	.03176	.09280	-.02937	.05080	-.08320
2.498	4.340	-.01300	.02398	.09210	-.04483	.07840	-.12700
2.498	6.480	-.00700	.00953	.09190	-.06089	.10720	-.17430
2.498	8.630	.00500	-.00723	-.00001	-.00647	.01096	-.01802
GRADIENT		.00033					

RUN NO. 233/ 0   RNVL = 2.00   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
2.999	-8.670	.02000	-.00129	.09300	.05338	-.09910	.16000
2.999	-6.490	.00300	.01326	.09320	.03979	-.07290	.11760
2.999	-4.310	-.00700	.02251	.09300	.02601	-.04710	.07640
2.999	-2.130	-.01100	.02766	.09280	.01251	-.02220	.03650
2.999	2.240	-.01000	.02698	.09280	-.01346	.02360	-.03920
2.999	4.430	-.02200	.01874	.09270	-.02703	.04850	-.07920
2.999	6.610	.00700	.00944	.09270	-.04064	.07420	-.12010
2.999	8.820	.02500	-.00562	.09290	-.05472	.10090	-.16360
2.999		.00050	-.00038	-.00203	-.00604	.01185	-.01770
GRADIENT							

RUN NO. 223/ 0   RNVL = 1.99   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
3.502	-8.620	.02500	.00717	.09130	.05021	-.09870	.15970
3.502	-6.590	-.01000	.02007	.09090	.03704	-.07300	.11740
3.502	-4.380	-.02200	.02951	.08990	.02455	-.04670	.07810
3.502	-2.170	-.02100	.03086	.09150	.01196	-.02410	.03880
3.502	2.280	-.02000	.02999	.09120	-.01207	.02270	-.03770
3.502	4.500	-.01700	.02651	.09130	-.02472	.04760	-.07760
3.502	6.720	-.00300	.01824	.09200	-.03749	.07220	-.11760
3.502	8.950	.01700	.00504	.09100	-.05035	.09770	-.15910
3.502		.00300	-.00031	-.00002	-.00552	.01178	-.01747
GRADIENT							

DATE 28 OCT 73   TABULATED SOURCE FORCE DATA-1A9C

(BBNDS)   (15 SEP 73)

AMES 87-T37 1A9 CRA + S3 + T9 ORBITER

REFERENCE DATA

SREF =	2.4210 SQ.FT.	XMRP =	28.9900 IN.
LREF =	39.8490 IN.	YMRP =	.0000 IN.
BREF =	39.8490 IN.	ZMRP =	.0000 IN.
SCALE =	.0060 SCALE		

PARAMETRIC DATA

ALPHA =	-2.000	ORBINC =	.500
RUDDER =	.000	ELEVON =	.000
RUDFLR =	.000		

RUN NO. 244/ 0 RN/L = 1.50 GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
2.498	-8.500	.03900	-.01295	.08660	.03540	-.09430	.15390
2.498	-6.360	.02600	-.02069	.08680	.03999	-.06670	.10910
2.498	-4.220	.01900	.00733	.08690	.02497	-.04050	.06700
2.498	-2.080	.01900	.01188	.08710	.01145	-.01790	.02990
2.498	2.200	.01400	.01186	.08780	-.01457	.02440	-.04040
2.498	2.200	.02100	.02484	.08730	-.02617	.04680	-.07740
2.498	4.330	.02900	-.00396	.08730	-.04332	.07390	-.12040
2.498	6.470	.04500	-.01822	.08670	-.05868	.10150	-.16540
2.498	8.610	.02042	-.02023	.00017	-.00618	.01014	-.01680
	GRADIENT						

RUN NO. 234/ 0 RN/L = 1.99 GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
2.999	-8.670	.01100	-.01896	.08230	.05327	-.09610	.15570
2.999	-6.560	.02490	-.00473	.08280	.03951	-.07060	.11420
2.999	-4.310	.01400	.00504	.08270	.02617	-.04620	.07510
2.999	-2.130	.02800	.01081	.08220	.01292	-.02230	.03670
2.999	2.240	.00900	.00969	.08210	-.01349	.02390	-.03930
2.999	2.240	.01700	.00227	.08320	-.02668	.04760	-.07820
2.999	4.420	.02700	-.01726	.08270	-.04008	.07140	-.11640
2.999	6.590	.04200	-.02013	.08280	-.05366	.09660	-.15720
2.999	8.780	.00032	-.00031	.00014	-.00607	.01069	-.01753
	GRADIENT						

RUN NO. 224/ 0 RN/L = 1.99 GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
3.502	-8.820	.02900	-.00675	.08390	.04820	-.09280	.15180
3.502	-6.590	.01800	.00640	.08370	.03537	-.06830	.11020
3.502	-4.380	-.00100	.01405	.08310	.02310	-.04520	.07290
3.502	-2.160	-.00200	.01639	.08290	.01142	-.02280	.03670
3.502	2.270	-.00500	.01712	.08260	-.01204	.02230	-.03680
3.502	2.270	.00100	.00262	.08260	-.02365	.04450	-.07270
3.502	4.490	.00900	.00413	.08190	-.03544	.06620	-.10890
3.502	6.710	.02200	-.00514	.08200	-.04795	.08990	-.14830
3.502	8.930	.00014	-.00010	-.00004	-.00528	.01013	-.01641
	GRADIENT						

DATE 28 OCT 73   TABULATED SOURCE FORCE DATA-IA9C

(88NC016)   (15 SEP 73)

AFES 87-757 IA9 OEA + S3 + T9 ORBITER

REFERENCE DATA

PARAMETRIC DATA

SREF =	2.4210 SQ.FT.	XMRP =	28.5300 IN.	ALPHA =	.000	ORBINC =	.500
LREF =	39.8490 IN.	YMRP =	.0000 IN.	RUDDER =	.000	ELEVON =	.000
BREF =	39.8490 IN.	ZMRP =	.0000 IN.	RUDFLR =	.000		
SCALE =	.0300 SCALE						

RUN NO. 245/ 0   RNVL =   1.50   GRADIENT INTERVAL =   -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
2.498	-8.500	.07500	-.04192	.08170	.05289	-.08960	.14690
2.498	-6.360	.06200	-.02948	.08260	.03801	-.06270	.17340
2.498	-4.220	.05100	-.01977	.08190	.02428	-.03910	.06470
2.498	-2.080	.04800	-.01537	.08190	.01078	-.01670	.02770
2.498	2.190	.04900	-.01576	.08270	-.01493	.02490	-.04140
2.498	2.190	.05600	-.02319	.08220	-.02835	.04740	-.07810
2.498	4.330	.06400	-.03177	.08190	-.04194	.07130	-.11700
2.498	6.470	.08000	-.04677	.08170	-.05715	.09900	-.16180
2.498	8.610	.00051	-.00024	.00207	-.00613	.01024	-.01660
GRADIENT							

RUN NO. 235/ 0   RNVL =   2.00   GRADIENT INTERVAL =   -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
2.999	-8.670	.06000	-.03292	.07820	.04968	-.08820	.14340
2.999	-6.490	.04500	-.02035	.07770	.03641	-.06370	.10380
2.999	-4.300	.03400	-.01043	.07780	.02929	-.04000	.06590
2.999	-2.150	.02800	-.00382	.07820	.01186	-.01830	.03070
2.999	2.240	.02800	-.00449	.07870	-.01299	.02170	-.03700
2.999	4.410	.03400	-.01095	.07770	-.02529	.04390	-.07210
2.999	6.590	.04500	-.02116	.07800	-.03847	.06680	-.10980
2.999	8.770	.06000	-.03405	.07770	-.05194	.09200	-.15020
4.999		-.00000	-.00008	.00001	-.00554	.00950	-.01577
GRADIENT							

RUN NO. 225/ 0   RNVL =   1.99   GRADIENT INTERVAL =   -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
3.502	-8.810	.04200	-.02131	.07670	.04642	-.08710	.14290
3.502	-6.590	.02900	-.01027	.07610	.03401	-.06410	.10380
3.502	-4.380	.02170	-.00207	.07650	.02213	-.04280	.06840
3.502	-2.160	.01870	.00166	.07620	.01092	-.02150	.03440
3.502	2.270	.01700	.00193	.07610	-.01026	.01820	-.03030
3.502	2.270	.02200	-.00242	.07630	-.02170	.03990	-.06520
3.502	4.480	.02900	-.01030	.07560	-.03310	.06030	-.09950
3.502	6.700	.04300	-.02285	.07540	-.04517	.08250	-.13640
3.502	8.920	.00004	-.00003	-.00002	-.00491	.00926	-.01498
GRADIENT							

DATE 28 OCT 73   TABULATED SOURCE FORCE DATA-1A9C

(88N2D7)   (13 SEP 73)

AMES 87-717 IA9 O2A + S3 + T9 ORBITER

PARAMETRIC DATA

REFERENCE DATA

SREF =	2.4210 SQ.FT.	XREF =	28.5920 IN.
LREF =	39.8490 IN.	YREF =	.0000 IN.
BREF =	39.8490 IN.	ZREF =	.0000 IN.
SCALE =	.0320 SCALE		

ALPHA =	2.000	ORBINC =	.000
RUDDER =	.000	ELEVON =	.000
RUDFLR =	.000		

RUN NO. 246/ 0   RN/L = 1.50   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
2.498	-8.500	.11200	-.07052	.07860	.03177	-.08040	.14590
2.498	-6.360	.09800	-.05757	.07860	.03730	-.06170	.10220
2.498	-4.220	.08920	-.04839	.07870	.02378	-.03800	.06310
2.498	-2.080	.08300	-.04249	.07910	.01099	-.01680	.02810
2.498	2.190	.08400	-.04334	.07930	-.01423	.02330	-.03870
2.498	4.330	.09200	-.05082	.07920	-.02677	.04410	-.07290
2.498	6.460	.10100	-.06062	.07860	-.03983	.06750	-.11120
2.498	8.610	.11600	-.07452	.07820	-.05595	.09400	-.15410
2.498	GRADIENT	.02033	-.00027	.00004	-.00590	.00956	-.01585

RUN NO. 236/ 0   RN/L = 2.00   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
2.999	-8.660	.08900	-.05547	.07300	.04807	-.08370	.13640
2.999	-6.480	.07600	-.04378	.07260	.03521	-.05990	.09840
2.999	-4.310	.06600	-.03455	.07290	.02245	-.03750	.06290
2.999	-2.130	.06100	-.02958	.07220	.01087	-.01760	.02960
2.999	2.230	.06200	-.03020	.07290	-.01108	.01790	-.03000
2.999	4.410	.06700	-.03562	.07320	-.02283	.03740	-.06300
2.999	6.590	.07700	-.04509	.07350	-.03547	.05990	-.09940
2.999	8.770	.09000	-.05634	.07350	-.04873	.08420	-.13820
2.999	GRADIENT	.00514	-.00013	.00011	-.00516	.00847	-.01423

RUN NO. 226/ 0   RN/L = 1.98   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
3.502	-8.820	.06300	-.03687	.07110	.04394	-.07590	.13050
3.502	-6.590	.04900	-.02507	.07070	.03165	-.05770	.09390
3.502	-4.370	.04300	-.01827	.07110	.02039	-.03770	.06050
3.502	-2.150	.04200	-.01534	.07080	.00970	-.01890	.02930
3.502	2.260	.04200	-.01664	.07120	-.00975	.01650	-.02720
3.502	4.480	.04500	-.02011	.07130	-.02039	.03540	-.05820
3.502	6.700	.05200	-.02760	.06980	-.03175	.05510	-.09160
3.502	8.920	.06500	-.03867	.07030	-.04389	.07710	-.12820
3.502	GRADIENT	.00527	-.00023	.00004	-.00457	.00816	-.01329

DATE 26 OCT 73   TABULATED SOURCE FORCE DATA-IA9C

                        (BONDED)   (15 SEP 73)

                        AMES 87-707 IA9 O2A + S3 + T9 ORBITER

                                                    PARAMETRIC DATA

REFERENCE DATA

SREF = 2.4210 SQ.FT.   XMRP = 28.5500 IN.   ALPHA = 4.000   ORBINC = .900
LREF = 39.8400 IN.   YMRP =   .0000 IN.   RUDDER =   .000   ELEVON = .000
BREF = 39.8400 IN.   ZMRP =   .0000 IN.   RUDFLR =   .000
SCALE =   .0300 SCALE

RUN NO. 247/ 0   RNVL = 1.50   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
2.498	-8.480	.19300	-.10101	.07480	.04966	-.08420	.13870
2.498	-6.350	.13900	-.08885	.07560	.03611	-.09940	.09800
2.498	-4.210	.13000	-.07992	.07590	.02299	-.03680	.06700
2.498	-2.080	.12300	-.07347	.07610	.01086	-.01670	.02760
2.498	2.190	.12600	-.07544	.07620	-.01344	.02220	-.03680
2.498	4.330	.13100	-.08097	.07610	-.02560	.04250	-.07020
2.498	6.470	.13900	-.09017	.07570	-.03811	.06450	-.10610
2.498	8.620	.15400	-.10425	.07520	-.05171	.08920	-.14660
GRADIENT		.00002	-.00019	.00002	-.00369	.00925	-.01530

RUN NO. 237/ 0   RNVL = 2.00   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
2.999	-8.650	.11700	-.07675	.06997	.04687	-.08060	.13140
2.999	-6.470	.10400	-.06415	.06960	.03418	-.05750	.09440
2.999	-4.300	.09600	-.05678	.06930	.02195	-.03570	.05960
2.999	-2.120	.09200	-.05286	.06920	.01092	-.01790	.02900
2.999	2.230	.09200	-.05281	.06940	-.01076	.01600	-.02890
2.999	4.410	.09600	-.05761	.06940	-.02169	.03420	-.05820
2.999	6.600	.10500	-.06625	.06960	-.03415	.05680	-.09430
2.999	8.780	.11700	-.07758	.06910	-.04695	.08010	-.13170
GRADIENT		.00002	-.00207	-.00002	-.00501	.00795	-.01344

RUN NO. 227/ 0   RNVL = 1.99   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
3.502	-8.780	.07400	-.05341	.06630	.04265	-.07540	.12360
3.502	-6.570	.07300	-.04306	.06650	.03065	-.05420	.08850
3.502	-4.360	.06700	-.03691	.06630	.01970	-.03530	.05710
3.502	-2.150	.06400	-.03305	.06690	.00951	-.01760	.02820
3.502	2.270	.06300	-.03326	.06610	-.00913	.01450	-.02440
3.502	4.490	.06600	-.03676	.06610	-.01917	.03190	-.05310
3.502	6.710	.07400	-.04419	.06560	-.03008	.05040	-.08440
3.502	8.930	.08600	-.05460	.06520	-.04203	.07120	-.11890
GRADIENT		-.00014	-.00003	-.00003	-.00436	.00753	-.01234

DATE 26 OCT 73   TABULATED SOURCE FORCE DATA-IA9C

(BBND09)   (15 SEP 73)

AMES 87-727 IA9 O2A + S3 + T9 ORBITER

REFERENCE DATA

				PARAMETRIC DATA	
SREF =	2.4210 SQ.FT.	XMRP =	28.5300 IN.	ALPHA =	6.000
LREF =	39.0400 IN.	YMRP =	.0000 IN.	RUDDER =	.000
BREF =	39.0400 IN.	ZMRP =	.0000 IN.	RUDFLR =	.000
SCALE =	.0300 SCALE				

					ORBINC =	.900
					ELEVON =	.000

RUN NO. 248/ 0   RN/L = 1.90   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
2.498	-8.470	.16900	-.13110	.07290	.04848	-.06040	.13260
2.498	-6.350	.17900	-.12207	.07360	.03929	-.05710	.09970
2.498	-4.200	.16900	-.11129	.07370	.02234	-.03530	.05600
2.498	-2.070	.16500	-.10586	.07450	.01034	-.01550	.02560
2.498	2.190	.16600	-.10713	.07470	-.01234	.02020	-.03570
2.498	4.350	.17100	-.11264	.07430	-.02442	.04030	-.06640
2.498	6.480	.18300	-.12397	.07380	-.03691	.06160	-.10110
2.498	8.630	.19300	-.13261	.07210	-.09030	.08520	-.14040
	GRADIENT	.00024	-.00019	.00007	-.00545	.00877	-.01445

RUN NO. 238/ 0   RN/L = 2.00   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
2.999	-8.650	.14200	-.09659	.06600	.04562	-.07710	.12560
2.999	-6.450	.15100	-.08627	.06570	.03309	-.05490	.09920
2.999	-4.280	.12400	-.07871	.06590	.02120	-.03430	.05710
2.999	-2.120	.12100	-.07476	.06650	.01084	-.01730	.02870
2.999	2.230	.12100	-.07555	.06690	-.01019	.01920	-.02620
2.999	4.410	.12400	-.07994	.06580	-.02050	.03210	-.05440
2.999	6.600	.13500	-.08954	.06580	-.03252	.05330	-.08680
2.999	8.790	.14400	-.09866	.06610	-.04511	.07550	-.12460
	GRADIENT	.00220	-.00015	.00001	-.00481	.00760	-.01279

RUN NO. 228/ 0   RN/L = 1.99   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
3.502	-8.770	.11900	-.06935	.06230	.04177	-.07180	.11790
3.502	-6.550	.09500	-.06090	.06210	.02993	-.05180	.08460
3.502	-4.350	.11900	-.05397	.06220	.01893	-.03310	.05410
3.502	-2.150	.14000	-.04901	.06320	.00947	-.01610	.02690
3.502	2.270	.14500	-.04979	.06290	-.00888	.01230	-.02190
3.502	4.490	.13920	-.05457	.06220	-.01823	.02890	-.04910
3.502	6.710	.13600	-.06125	.06190	-.02919	.04720	-.07940
3.502	8.940	.11900	-.07021	.06130	-.04077	.06700	-.11250
	GRADIENT	.00235	-.00209	-.00001	-.00419	.00690	-.01153

DATE 20 OCT 73   TABULATED SOURCE FORCE DATA-IA9C

(BBMD1D)   (15 SEP 73)

AMES 87-707 IA9 O2A + S3 + T9 ORBITER

PARAMETRIC DATA

REFERENCE DATA

SREF =	2.4210 SQ.FT.	XMRP =	28.5300 IN.	ALPHA =	8.000
LREF =	39.849. IN.	YMRP =	.0000 IN.	RUDDER =	.000
BREF =	39.849 IN.	ZMRP =	.0000 IN.	RUDFLR =	.000
SCALE =	.0300 SCALE				

ORBINC = .900
ELEVON = .000

RUN NO. 249/ 0 RNVL = 1.50 GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
2.498	-8.440	.22100	-.15634	.07080	.04795	-.07710	.12670
2.498	-6.310	.21300	-.14690	.07290	.03456	-.05590	.09010
2.498	-4.190	.20700	-.14090	.07290	.02240	-.03480	.05650
2.498	-2.070	.20100	-.13522	.07280	.01044	-.01990	.02560
2.498	2.200	.20100	-.13447	.07380	-.01134	.01890	-.03140
2.498	4.340	.20400	-.13898	.07260	-.02326	.03890	-.06310
2.498	6.520	.21000	-.14652	.07050	-.03628	.05960	-.09750
2.498	8.640	.22300	-.15990	.06980	-.04998	.08200	-.13530
2.498	GRADIENT	-.00028	.00018	.00006	-.00530	.00850	-.01387

RUN NO. 239/ 0 RNVL = 2.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
2.999	-8.600	.16700	-.11660	.06250	.04489	-.07360	.12030
2.999	-6.430	.15600	-.10664	.06350	.03265	-.05250	.08620
2.999	-4.270	.14700	-.09708	.06370	.02103	-.03390	.05490
2.999	-2.110	.14400	-.09304	.06350	.01075	-.01630	.02710
2.999	2.240	.14400	-.09366	.06380	-.00985	.01400	-.02450
2.999	4.430	.14900	-.09915	.06420	-.02036	.03110	-.05270
2.999	6.620	.15900	-.10919	.06290	-.03163	.05060	-.08460
2.999	8.810	.16600	-.11677	.06260	-.04408	.07200	-.11910
2.999	GRADIENT	.00019	-.00022	.00006	-.00475	.00731	-.01227

RUN NO. 229/ 0 RNVL = 1.99 GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
3.502	-8.740	.12100	-.08249	.05790	.04094	-.06640	.11240
3.502	-6.550	.11400	-.07485	.05880	.02942	-.04920	.06070
3.502	-4.330	.10600	-.06718	.05870	.01946	-.03170	.05190
3.502	-2.140	.10200	-.06242	.06010	.00969	-.01540	.02540
3.502	2.280	.10100	-.06224	.06000	-.00919	.01160	-.02380
3.502	4.500	.10500	-.06656	.05840	-.01856	.02700	-.04650
3.502	6.730	.11100	-.07424	.05810	-.02829	.04410	-.07480
3.502	8.960	.11900	-.08169	.05790	-.03974	.06320	-.10660
3.502	GRADIENT	-.00213	.00205	-.00203	-.00430	.00654	-.01101

DATE 26 OCT 73 TABULATED SOURCE FORCE DATA-IA9C

AMES 67-T37 IA9 O2A + S3 + T9 ORBITER

(BBKD11) (13 SEP 73)

REFERENCE DATA

SREF =	2.4210 SQ.FT.	XMRP = 28.5330 IN.
LREF =	39.0450 IN.	YMRP = .0000 IN.
BREF =	39.0450 IN.	ZMRP = .0000 IN.
SCALE =	.0330 SCALE	

PARAMETRIC DATA

ALPHA =	-8.000	ORBINC =	.500
RUDDER =	-15.000	ELEVON =	.000
RUDFLR =	.000		

RUN NO. 287/ 0   RNVL = 1.50   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
2.498	-8.460	-.06700	.07094	.10700	.05537	-.09780	.16610
2.498	-6.330	-.07820	.08185	.10740	.03795	-.06580	.11400
2.498	-4.200	-.08400	.08975	.10820	.02079	-.03320	.06320
2.498	.060	-.08800	.09551	.10840	-.00014	.01870	-.02100
2.498	2.460	-.08420	.08984	.10930	-.03734	.07120	-.10620
2.498	4.360	-.07890	.08226	.10860	-.05410	.10250	-.15620
2.498	6.320	-.06690	.07106	.10960	-.07067	.13320	-.20740
2.498	8.680	.00000	.00001	.00013	-.00679	.01220	-.01979
2.498	GRADIENT	.00000					

RUN NO. 256/ 0   RNVL = 2.00   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
2.999	-8.660	-.01900	.03110	.10760	.05604	-.10860	.17910
2.999	-6.490	-.03590	.04508	.10830	.04071	-.07810	.13040
2.999	-4.310	-.04300	.05306	.10860	.02506	-.04740	.08240
2.999	.040	-.04720	.05894	.10930	-.00409	.00860	-.00790
2.999	4.440	-.04300	.05415	.11010	-.03271	.06390	-.09570
2.999	6.540	-.03600	.04662	.11000	-.04752	.09240	-.14200
2.999	8.640	-.02100	.03312	.11040	-.06264	.12210	-.18990
2.999	GRADIENT	.00000	.00012	.00017	-.00660	.01267	-.02035

RUN NO. 257/ 0   RNVL = 2.00   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
3.502	-8.790	-.01400	.02253	.10850	.05264	-.10570	.17450
3.502	-6.580	-.02600	.03347	.10710	.03780	-.07610	.12610
3.502	-4.370	-.03200	.03927	.10710	.02273	-.04590	.07840
3.502	.040	-.03550	.04267	.10670	-.00401	.00960	-.00930
3.502	4.510	-.03200	.04705	.10780	-.03113	.06480	-.09770
3.502	6.750	-.02550	.03343	.10810	-.04551	.09390	-.14430
3.502	8.980	-.01100	.02194	.10890	-.05979	.12160	-.18970
3.502	GRADIENT	.00000	.00029	.00008	-.00607	.01242	-.01983

CATE 30 OCT 73   TABULATED SOURCE FORCE DATA-1A9C

(B8ND12) (15 SEP 73)

AMES 87-707 1A9 O2A + S3 + T9 ORBITER

PARAMETRIC DATA

REFERENCE DATA

SREF = 2.4210 SQ.FT.	XMRP = 28.5300 IN.	ALPHA = -4.000	ORBINC = .900
LREF = 39.6490 IN.	YMRP = .0000 IN.	RUDDER = -15.000	ELEVON = .000
BREF = 39.6490 IN.	ZMRP = .0000 IN.	RUDFLR = .000	
SCALE = .0325 SCALE			

RUN NO. 266/ 0 RNVL = 1.50 GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
2.498	-8.490	-.00600	.02287	.09400	.05267	-.08850	.15030
2.498	-6.390	-.02000	.03581	.09490	.03618	-.05910	.10250
2.498	-4.210	-.03000	.04544	.09340	.02039	-.03070	.05780
2.498	.560	-.03000	.04896	.09550	-.00766	.01760	-.02030
2.493	.560	-.02500	.04262	.09610	-.03533	.06490	-.09730
2.498	4.340	-.01700	.03568	.09520	-.05089	.09240	-.14150
2.498	6.480	-.00400	.02144	.09540	-.06682	.12040	-.18830
2.498	8.635	.00059	-.00033	.00008	-.00652	.01118	-.01814
	GRADIENT						

RUN NO. 257/ 0 RNVL = 2.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
2.999	-8.670	.02100	-.00142	.09170	.05141	-.09490	.15740
2.999	-6.500	.00400	.01303	.09190	.03718	-.06760	.11370
2.999	-4.310	.00500	.02276	.09280	.02032	-.04130	.07220
2.999	.050	-.01020	.02892	.09340	-.00369	.00760	-.00630
2.999	4.410	-.00500	.02247	.09400	-.02990	.05460	-.08330
2.999	6.610	.00600	.01239	.09370	-.04338	.09000	-.12410
2.999	8.790	.02300	-.00188	.09380	-.05761	.10700	-.16780
		-.00200	-.00003	.00014	-.00610	.01100	-.01783
	GRADIENT						

RUN NO. 251/ 0 RNVL = 1.98 GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
3.502	-8.820	.01600	-.00088	.09070	.04835	-.09390	.15600
3.502	-6.600	.00100	.01174	.09040	.03500	-.06790	.11340
3.502	-4.380	-.00700	.01934	.09000	.02177	-.04200	.07200
3.502	.050	-.00900	.02336	.09050	-.00329	.00780	-.00730
3.502	4.490	-.00700	.02052	.09150	-.02809	.05610	-.08560
3.502	6.710	-.00100	.01337	.09130	-.04084	.08060	-.12590
3.502	8.940	.01500	-.00036	.09080	-.05393	.10630	-.16790
3.512		.00020	.00013	.00017	-.00562	.01106	-.01777
	GRADIENT						

DATE 24 OCT 73

TABULATED SOURCE FORCE DATA-1A9C

(BBN*13) (15 SEP 73)

AMES 87-707 1A9 O2A + S3 + T9 ORBITER

REFERENCE DATA

SREF	=	2.4210 SQ.FT.	XMRP	=	28.5500 IN.
LREF	=	39.6490 IN.	YMRP	=	.0000 IN.
BREF	=	39.6490 IN.	ZMRP	=	.0000 IN.
SCALE	=	.0300 SCALE			

PARAMETRIC DATA

ALPHA	=	.000	ORBINC	=	.500
RUDDER	=	-15.000	ELEVON	=	.000
RUDFLR	=	.000			

RUN NO. 265/ 0   RNVL =   1.50   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
2.498	-8.490	.06700	-.03502	.08360	.04847	-.07970	.13640
2.498	-6.350	.05500	-.02247	.08380	.03328	-.05230	.09210
2.498	-4.210	.04400	-.01299	.08490	.01913	-.02780	.05220
2.498	.060	.03920	-.00335	.08580	.00738	.01620	-.01920
2.498	4.330	.04700	-.01558	.08570	-.03341	.09920	-.08990
2.498	4.330	.05250	-.02575	.08580	-.04112	.08310	-.12890
2.498	6.470	.06800	-.03538	.08530	-.06249	.11060	-.17430
2.498	8.610	.07035	-.00024	.00014	-.00615	.01019	-.01659
	GRADIENT						

RUN NO. 258/ 0   RNVL =   1.99   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
2.999	-8.660	.05800	-.03157	.07880	.04664	-.08090	.13590
2.999	-6.480	.04300	-.01859	.07870	.03238	-.05550	.09520
2.999	-4.300	.03400	-.00989	.07990	.01943	-.03150	.05720
2.999	.060	.02600	-.00075	.08050	-.00530	.01143	-.01310
2.999	4.410	.03400	-.00993	.08010	-.02915	.05260	-.08120
2.999	4.410	.04500	-.01985	.08040	-.04207	.07540	-.11830
2.999	6.590	.05900	-.03197	.08110	-.05554	.10030	-.15830
2.999	8.770	-.00000	-.00000	.00007	-.00558	.00966	-.01589
	GRADIENT						

RUN NO. 252/ 0   RNVL =   1.99   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
3.502	-8.820	.05000	-.02752	.07550	.04489	-.08310	.13680
3.502	-6.620	.03620	-.01542	.07550	.03233	-.05980	.10040
3.502	-4.380	.02820	-.00754	.07620	.02090	-.03830	.06480
3.502	.040	.02100	-.00039	.07750	-.00172	.00390	-.00200
3.502	4.471	.03000	-.00756	.07730	-.02382	.04560	-.06950
3.502	6.690	.03500	-.01407	.07610	-.03524	.06610	-.10390
3.502	8.910	.04900	-.02614	.07660	-.04761	.08890	-.14160
3.502		.00023	-.00026	.00012	-.00501	.00943	-.01518
	GRADIENT						

DATE 28 OCT 73   TABULATED SOURCE FORCE DATA-1A9C

(28N0314) (15 SEP 73)

AMES 87-757 1A9 OZA + S3 + T9 ORBITER

PARAMETRIC DATA

REFERENCE DATA

SREF =	2.4210 SQ.FT.	XMRP =	28.5300 IN.
LREF =	39.0490 IN.	YMRP =	.0000 IN.
BREF =	39.0490 IN.	ZMRP =	.0000 IN.
SCALE =	.0300 SCALE		

ALPHA =	4.000	ORBINC =	.500
RUDDER =	-15.000	ELEVON =	.000
RUDFLR =	.000		

RUN NO. 264/ 0 RNVL = 1.99 GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
2.498	-8.480	.14300	-.09408	.07890	.04668	-.07740	.13280
2.498	-6.340	.13100	-.08189	.07910	.03297	-.05230	.09130
2.498	-4.210	.12200	-.07267	.07880	.01952	-.02920	-.00
2.498	.060	.11920	-.06488	.07990	-.00533	.02200	-.01350
2.498	2.300	.12200	-.07287	.07920	-.02992	.05270	-.07990
2.498	4.330	.13100	-.08201	.08020	-.04299	.07570	-.11780
2.498	6.470	.14100	-.09295	.07810	-.05672	.10030	-.15860
2.498	8.620	.00000	-.00002	.00005	-.00579	.00959	-.01560
	GRADIENT						

RUN NO. 259/ 0 RNVL = 1.99 GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
2.999	-8.640	.11600	-.07521	.07210	.04439	-.07450	.12570
2.999	-6.470	.10300	-.06388	.07220	.03136	-.05580	.08780
2.999	-4.290	.09700	-.05678	.07180	.01834	-.02710	.05030
2.999	.060	.09200	-.05052	.07320	-.00417	.00900	-.01030
2.999	4.420	.09720	-.05726	.07190	-.02609	.04390	-.06940
2.999	6.600	.10920	-.06574	.07160	-.03825	.06990	-.11470
2.999	8.780	.11900	-.07547	.07110	-.05107	.08930	-.14220
2.999		.00005	-.00005	.00001	-.00510	.00815	-.01374
	GRADIENT						

RUN NO. 253/ 0 RNVL = 1.99 GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
3.502	-8.790	.09300	-.06509	.06560	.04207	-.07340	.12290
3.502	-6.590	.08300	-.05864	.06580	.02976	-.05190	.08740
3.502	-4.370	.07300	-.04174	.06580	.01869	-.03260	.05550
3.502	.090	.06920	-.03625	.06730	-.00128	.00240	-.00070
3.502	4.480	.07300	-.04103	.06700	-.02682	.03630	-.05640
3.502	6.700	.08200	-.04944	.06620	-.03202	.05530	-.08840
3.502	8.910	.09300	-.05949	.06560	-.04412	.07690	-.12390
3.502		.00000	-.00008	.00014	-.00446	.00779	-.01254
	GRADIENT						

DATE 26 OCT 73   TABULATED SOURCE FORCE DATA-IA9C

AMES 87-757 IA9 O2A + S3 + T9 ORBITER

REFERENCE DATA   PARAMETRIC DATA

SREF =	2.4210 SQ.FT.	XREF =	28.5500 IN.
LREF =	39.8490 IN.	YREF =	.0000 IN.
BREF =	39.6490 IN.	ZREF =	.0000 IN.
SCALE =	.0300 SCALE		

ALPHA =	6.000	ORBINC = .000
RUDDER =	-15.000	ELEVON = .000
RUDFLR =	.000	

RUN NO. 263/ 0   RNVL = 1.50   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
2.498	-8.460	.18290	-.12491	.07440	.04452	-.07380	.12680
2.498	-6.325	.17100	-.11329	.07680	.03236	-.05390	.08740
2.498	-4.195	.16290	-.10492	.07630	.01905	-.02790	.05970
2.498	.055	.15850	-.09850	.07790	-.00474	.01080	-.01210
2.493	.055	.16600	-.10647	.07840	-.02603	.04830	-.07340
2.493	4.340	.17600	-.11672	.07820	-.04081	.06970	-.10380
2.493	6.490	.18300	-.12477	.07610	-.05430	.09390	-.14850
2.493	8.630	.00047	-.00019	.00025	-.00552	.00893	-.01455
	GRADIENT						

RUN NO. 260/ 0   RNVL = 2.00   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
2.999	-8.620	.14900	-.09474	.06890	.04298	-.07380	.11950
2.999	-6.450	.13300	-.08416	.06920	.03738	-.04830	.08361
2.999	-4.280	.12100	-.07588	.06910	.01806	-.02680	.04920
2.999	.060	.11600	-.06978	.06950	-.00324	.01680	-.00750
2.999	4.420	.12000	-.07568	.06950	-.02431	.04040	-.06410
2.999	6.620	.12900	-.08455	.06960	-.03634	.06140	-.09810
2.999	8.790	.14700	-.09426	.06320	-.04900	.08410	-.13460
	GRADIENT	-.00011	.00002	.00005	-.00487	.00772	-.01302

RUN NO. 254/ 0   RNVL = 1.99   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
3.512	-8.770	.11500	-.07715	.06170	.04129	-.07120	.11760
3.512	-6.570	.10500	-.06740	.06210	.02956	-.05020	.08430
3.512	-4.360	.09800	-.06360	.06170	.01845	-.03150	.05380
3.512	.040	.09200	-.05389	.06300	-.00046	.00070	.00130
3.512	4.480	.09600	-.05870	.06250	-.01917	.03190	-.05040
3.512	6.700	.10200	-.06529	.06290	-.03015	.05340	-.08120
3.512	8.930	.11200	-.07432	.06200	-.04201	.07360	-.11460
	GRADIENT	-.00022	.00021	.00009	-.00426	.00717	-.01179

DATE 08 OCT 73   TABULATED SOURCE

(B6N016)   (15 SEP 73)

+ S3 + T9 ORBITER

AE

PARAMETRIC DATA

ALPHA =	8.000 ORBINC = .000
RUDDER =	-15.000 ELEVON = .000
RUDFLR =	.000

REFERENCE DATA

SREF =	2.4215 SQ.FT.	XREF =	28.5000 IN.
LREF =	39.8400 IN.	YREF =	.0000 IN.
BREF =	39.8400 IN.	ZREF =	.0000 IN.
SCALE =	.0300 SCALE		

RUN NO. 262/ 0   RNVL =   1.50   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
2.498	-8.430	.21900	-.15274	.07350	.0463	-.07350	.12430
2.498	-6.310	.21820	-.14120	.07520	.03246	-.05115	.08700
2.498	-4.190	.19920	-.13242	.07590	.01992	-.03040	.05330
2.498	.050	.19500	-.12879	.07600	-.00306	.00690	-.00680
2.498	4.350	.20170	-.13432	.07630	-.02608	.04410	-.06740
2.498	6.500	.20500	-.13960	.07520	-.03948	.05640	-.10330
2.498	8.650	.21300	-.15322	.07360	-.05113	.08850	-.14090
2.498	GRADIENT	.00024	-.00022	.00005	-.00539	.00872	-.01413

RUN NO. 261/ 0   RNVL =   1.99   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
2.999	-8.590	.16100	-.11184	.06580	.0241	-.06800	.11460
2.999	-6.430	.15100	-.10194	.06580	.02999	-.04640	.08020
2.999	-4.260	.14200	-.09233	.06660	.01820	-.02660	.04820
2.999	.060	.13300	-.08520	.06750	-.00251	.01600	-.00660
2.999	4.430	.14500	-.09478	.06720	-.02359	.03800	-.06030
2.999	6.630	.15400	-.10423	.06660	-.03511	.05770	-.09260
2.999	8.810	.16211	-.11216	.06610	-.04772	.08020	-.12890
2.999	GRADIENT	.00035	-.00028	.00007	-.00481	.00743	-.01251

RUN NO. 255/ 0   RNVL =   1.99   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
3.502	-8.750	.22900	-.08651	.05780	.04092	-.06760	.11310
3.502	-6.550	.22100	-.07728	.05870	.02948	-.04650	.08170
3.502	-4.350	.11300	-.07215	.05860	.01923	-.03050	.05220
3.502	.050	.10500	-.06354	.06040	-.00031	.17010	.00190
3.502	4.490	.11400	-.07250	.05900	-.01931	.02930	-.04710
3.502	6.720	.12200	-.08033	.05890	-.02921	.04680	-.07600
3.502	8.950	.12700	-.08656	.05800	-.04045	.06650	-.19220
3.502	GRADIENT	.00012	-.00004	.00002	-.02436	.02676	-.01123

DATE 28 OCT 73   TABULATED SOURCE FORCE DATA-1A9C

(B8N017) (15 SEP 73)

AMES 87-757 IA9 O2A + S3 + T9 ORBITER

REFERENCE DATA

				PARAMETRIC DATA		
SREF = 2.4210 SQ.FT.	XMRP = 28.3300 IN.			ALPHA = -8.000	ORBINC = .000
LREF = 39.8490 IN.	YMRP = .0000 IN.			RUDDER = -10.000	ELEVON = .000
BREF = 39.8490 IN.	ZMRP = .0000 IN.			RUDFLR = .000	
SCALE = .0300 SCALE					

RUN NO. 274/ 0 RNVL = 1.50 GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
2.499	-8.490	-.04900	.05613	.10890	.06251	-.11510	.19020
2.499	-6.340	-.05500	.06691	.10920	.04522	-.08280	.13740
2.499	-4.210	-.06100	.07399	.10990	.02811	-.05140	.08680
2.499	.090	-.06700	.08134	.10970	-.00212	.00420	-.00200
2.499	4.360	-.06500	.07527	.11020	-.03255	.05910	-.09120
2.499	4.360	-.05400	.06624	.10970	-.04916	.09030	-.14100
2.499	6.520	-.04900	.05689	.10990	-.06529	.12090	-.19990
2.499	8.670	-.00011	.00015	.02008	-.00708	.01278	-.02077
	GRADIENT						

RUN NO. 280/ 0 RNVL = 2.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
2.999	-8.640	-.02900	.03091	.10880	.05609	-.10830	.17700
2.999	-4.290	-.04300	.05249	.10950	.02592	-.04920	.08300
2.999	.060	-.04600	.05787	.10980	-.00321	.00710	-.00700
2.999	4.455	-.04200	.05257	.11020	-.03230	.06300	-.09680
2.999	4.455	-.01900	.03097	.11020	-.06171	.12090	-.18990
2.999	8.855	.00012	.00001	.02008	-.00666	.01284	-.02057
	GRADIENT						

RUN NO. 268/ 0 RNVL = 1.99 GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
3.502	-8.770	-.01000	.02204	.10890	.05247	-.10530	.17230
3.502	-6.570	-.02900	.03219	.10950	.03797	-.07670	.12560
3.502	-4.360	-.03100	.03866	.10900	.02328	-.04730	.07900
3.502	.060	-.03200	.04198	.10870	-.00274	.00670	-.00670
3.502	4.520	-.03300	.04110	.11030	-.02880	.05900	-.09180
3.502	4.520	-.02900	.03392	.11040	-.04316	.08860	-.13830
3.502	6.760	-.01100	.02192	.11040	-.05736	.11640	-.18580
3.502	8.990	-.00023	.00027	.02015	-.00587	.01202	-.01923
	GRADIENT						

DATE 26 OCT 73   TABULATED SOURCE FORCE DATA-1A9C

(BBW021B)   (15 SEP 73)

AMES 87-757 1A9 O2A + S3 + T9 ORBITER

REFERENCE DATA

SREF =	2.4210 SQ.FT.	XORP =	28.5390 IN.
LREF =	39.8490 IN.	YMRP =	.0000 IN.
BREF =	39.8490 IN.	ZMRP =	.0000 IN.
SCALE =	.0350 SCALE		

PARAMETRIC DATA

ALPHA =	-4.000	ORBINC =	.500
RUDDER =	-10.000	ELEVON =	.000
RUDFLR =	.000		

RUN NO. 275/ 0   RNVL = 1.50   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
2.498	-8.500	.01400	.00969	.09560	.05846	-.10150	.16840
2.499	-6.360	-.00190	.02331	.09570	.04209	-.07220	.12070
2.499	-4.220	-.01700	.03186	.09590	.02613	-.04350	.07570
2.499	.060	-.01250	.03517	.09630	-.00228	.00440	-.00300
2.498	4.340	-.00700	.03047	.09670	-.03051	.05200	-.08140
2.498	6.490	.00200	.02039	.09600	-.04656	.08110	-.12790
2.499	8.630	.01800	.07679	.09600	-.06226	.10910	-.17380
2.498	GRADIENT	.00035	-.00016	.00009	-.00662	.01116	-.01835

RUN NO. 281/ 0   RNVL = 2.50   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
2.999	-8.660	.02200	-.00199	.09300	.05257	-.09670	.15880
2.999	-4.300	-.00400	.02167	.09400	.02441	-.04380	.07410
2.999	.060	-.00700	.02712	.09380	-.00298	.00610	-.00610
2.999	.060	-.00200	.02705	.09390	-.02930	.05370	-.08570
2.999	4.430	.02500	-.00441	.09330	-.05691	.10590	-.16620
2.999	8.810					.01117	-.01890
2.999	GRADIENT	.00023	-.00019	-.00001	-.00615		

RUN NO. 269/ 0   RNVL = 1.99   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
3.502	-8.810	.01700	-.00164	.09280	.04844	-.09460	.15560
3.502	-6.591	.00200	.01254	.09310	.03494	-.06820	.11240
3.502	-4.370	-.00500	.01912	.09380	.02233	-.04350	.07300
3.502	.060	-.00500	.02072	.09270	-.00189	.00440	-.00390
3.502	4.520	-.00400	.01837	.09360	-.02545	.05040	-.07850
3.502	6.720	.00300	.01076	.09320	-.03820	.07510	-.11880
3.502	8.940	.01700	-.00189	.09260	-.05147	.10080	-.16150
3.502	GRADIENT	.00011	-.00008	-.00202	-.00539	.01059	-.01778

DATE 28 OCT 73   TABULATED SOURCE FORCE DATA-IA9C

(BBW039)   (15 SEP 73)

AMES 87-737 IA9 O21 + S3 + T9 ORBITER

REFERENCE DATA   PARAMETRIC DATA

SREF =   2.4210 SQ.FT.   XMRF =   28.5590 IN.   ALPHA =   .000   ORBINC =   .595
LREF = 39.0490 IN.   YMRF =   .0000 IN.   RUDDER = -10.000   ELEVON =   .000
BREF = 39.0490 IN.   ZMRF =   .0000 IN.   RUDFLR =   .000
SCALE =   .0200 SCALE

RUN NO. 276/ 0   RNVL =   1.50   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
2.499	-8.500	.08000	-.04280	.08640	.05477	-.09540	.15570
2.499	-6.360	.06950	-.02965	.08660	.03927	-.06510	.11020
2.499	-4.220	.05600	-.02552	.08670	.02485	-.04010	.06960
2.499	.050	.04900	-.01229	.08720	-.00134	.00290	-.00130
2.499	.050	.05700	-.02072	.08710	-.02852	.04790	-.07490
2.499	4.330	.06500	-.02884	.08740	-.04228	.07190	-.11410
2.499	6.470	.07900	-.04247	.08690	-.05740	.09940	-.15890
2.499	8.610		-.00012	.00205	-.00624	.01029	-.01690
	GRADIENT						

RUN NO. 282/ 0   RNVL =   1.99   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
2.999	-8.660	.06900	-.03485	.08080	.04888	-.08650	.14300
2.999	-4.370	.04000	-.01270	.08100	.02226	-.03860	.06580
2.999	-4.370	.03208	-.00424	.08200	-.00239	.00430	-.00420
2.999	.060	.04100	-.01347	.08150	-.02658	.04650	-.07320
2.999	4.420	.06700	-.03634	.08160	-.05323	.09450	-.15130
2.999	8.780	.00011	-.00009	.00006	-.00560	.00976	-.01594
	GRADIENT						

RUN NO. 270/ 0   RNVL =   1.99   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
3.502	-8.810	.04870	-.02558	.07800	.04453	-.08310	.13780
3.502	-6.590	.03500	-.01372	.07820	.03233	-.06040	.10000
3.502	-4.370	.02620	-.00510	.07830	.02042	-.03680	.06450
3.502	.060	.02270	.00026	.07890	-.00137	.00260	-.00180
3.502	.060	.02200	-.00652	.07860	-.02316	.04360	-.06850
3.502	4.480	.03500	-.01332	.07820	-.03451	.06420	-.10300
3.502	6.710	.05900	-.02637	.07880	-.04704	.08790	-.14130
3.502	8.930	.00014	-.00016	.00003	-.00492	.00931	-.01503
	GRADIENT						

DATE 26 OCT 73   TABULATED SOURCE FORCE DATA-IA9C

AMES 87-757 IA9 ORA + S1 + T9 ORBITER

(80N02D)   (15 SEP 73)

REFERENCE DATA

		PARAMETRIC DATA	
SREF = 2.4210 SQ.FT.	XMRP = 28.5500 IN.	ALPHA = 4.000	ORBINC = .000
LREF = 39.8490 IN.	YMRP = .0000 IN.	RUDDER = -10.000	ELEVON = .000
BREF = 39.8490 IN.	ZMRP = .0000 IN.	RUDFLR = .000	
SCALE = .0350 SCALE			

RUN NO. 277/ 0   RNVL = 1.50   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
2.499	-8.480	.15470	-.10115	.07810	.04815	-.08190	.13710
2.499	-6.340	.14190	-.08831	.07940	.03467	-.05680	.09670
2.499	-4.210	.13920	-.08092	.07990	.02168	-.03490	.06010
2.499	.060	.12850	-.07391	.08020	-.00178	.00370	-.00300
2.499	4.330	.13600	-.08141	.08020	-.02534	.04210	-.06610
2.499	6.470	.14600	-.09200	.08010	-.03833	.06460	-.10310
2.499	8.620	.15800	-.10426	.07960	-.05170	.08870	-.14310
	GRADIENT	.00012	-.00006	.00014	-.00551	.00897	-.01478

RUN NO. 283/ 0   RNVL = 1.99   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
2.999	-8.650	.12200	-.07842	.07280	.04738	-.08160	.13490
2.999	-4.290	.10700	-.05775	.07310	.02161	-.03530	.06060
2.999	.060	.09400	-.05141	.07400	-.00116	.00180	-.00100
2.999	4.420	.10000	-.05842	.07320	-.02365	.03800	-.06190
2.999	8.790	.12200	-.07933	.07240	-.04885	.08350	-.13480
	GRADIENT	.00020	-.00038	.00001	-.00520	.00842	-.01402

RUN NO. 271/ 0   RNVL = 1.99   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
3.592	-8.790	.09700	-.06144	.06890	.04417	-.07790	.12910
3.592	-6.570	.08520	-.04961	.06920	.03166	-.05580	.09280
3.592	-4.360	.07600	-.04256	.06920	.02013	-.03580	.05950
3.592	.060	.07300	-.03789	.07060	-.00026	-.00010	.00170
3.592	4.490	.07700	-.04349	.06890	-.02008	.03400	-.05470
3.592	6.710	.08500	-.05095	.06770	-.03121	.05510	-.08680
3.592	8.930	.09500	-.06042	.06780	-.04375	.07490	-.12290
3.592		.00011	-.00011	-.00010	-.00454	.00789	-.01290
	GRADIENT						

DATE 08 OCT 73   TABULATED SOURCE FORCE DATA-1A9C

(08N021)   (15 SEP 73)

AMES 87-707 1A9 O2A + S3 + T9 ORBITER

REFERENCE DATA   PARAMETRIC DATA

SREF = 2.4210 SQ.FT.   XMRF = 28.5300 IN.   ALPHA =   6.000   ORBINC =   .000
LREF = 39.0490 IN.   YMRP =   .0000 IN.   RUDDER = -10.000   ELEVON =   .000
BREF = 39.0490 IN.   ZMRP =   .0000 IN.   RUDFLR =   .000
SCALE = .0300 SCALE

RUN NO. 278/ 0   RVL = 1.50   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
2.499	-8.460	.19950	-.13191	.07480	.04738	-.07870	.13220
2.499	-6.330	.16300	-.12152	.07590	.03432	-.05540	.09340
2.499	-4.270	.17950	-.11257	.07570	.02139	-.03580	.05620
2.499	.060	.16800	-.10597	.07650	-.00134	.00290	-.00210
2.499	4.363	.17400	-.11282	.07630	-.02436	.04040	-.06390
2.499	6.680	.18400	-.12259	.07680	-.03706	.06220	-.09860
2.499	8.630	.19570	-.13230	.07520	-.05353	.08580	-.13820
2.499	GRADIENT	.00012	-.00009	.00007	-.00536	.00869	-.01425

RUN NO. 284/ 0   RVL = 1.99   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
2.999	-8.630	.14700	-.09846	.06920	.04587	-.07780	.12870
2.999	-4.280	.12900	-.08050	.06980	.02112	-.03430	.05870
2.999	.060	.12400	-.07449	.07140	-.00033	.00040	-.00180
2.999	4.430	.12900	-.08075	.07020	-.02200	.03440	-.05630
2.999	8.800	.14900	-.09983	.06970	-.04652	.07770	-.12620
2.999	GRADIENT	.00002	-.00005	.00015	-.00495	.00789	-.01320

RUN NO. 272/ 0   RVL = 1.98   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
3.502	-8.770	.11600	-.07680	.06480	.04286	-.07560	.12210
3.502	-6.560	.11600	-.06732	.06550	.03128	-.05590	.09940
3.502	-4.350	.09300	-.06574	.06580	.01989	-.03450	.05780
3.502	.050	.09400	-.05406	.06650	.00057	-.00220	-.00450
3.502	4.430	.09900	-.06093	.06430	-.01873	.03530	-.04950
3.502	6.710	.10500	-.06670	.06480	-.02954	.05840	-.07960
3.502	8.940	.11900	-.07616	.06380	-.04125	.06840	-.11280
3.502	GRADIENT	.00020	-.00017	-.00017	-.00437	.00733	-.01224

DATE 26 OCT 73   TABULATED SOURCE FORCE DATA-1A9C

(B8N022)   (15 SEP 73)

AMES 87-707 IA9 O2A + S3 + T9 ORBITER

PARAMETRIC DATA

REFERENCE DATA

SREF =	2.4210 SQ FT.	XMRP =	28.5370 IN.	ALPHA =	8.000	ORBINC =	.000
LREF =	39.8490 IN.	YMRP =	.0000 IN.	RUDDER =	-10.000	ELEVON =	.000
BREF =	39.8490 IN.	ZMRP =	.0000 IN.	RUDFLR =	.000		
SCALE =	.0100 SCALE						

RUN NO. 279/ 0   RNVL =   1.57   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
2.499	-8.430	.22690	-.15817	.07900	.04725	-.07990	.12710
2.499	-6.350	.21690	-.14712	.07960	.03351	-.05360	.08990
2.499	-4.180	.21090	-.14077	.07380	.02299	-.03290	.05990
2.499	.090	.20390	-.13446	.07460	-.00115	.00310	-.00250
2.499	4.390	.21190	-.14140	.07920	-.02323	.03820	-.05990
2.499	6.500	.21690	-.14771	.07480	-.03628	.05980	-.09480
2.499	8.650	.22990	-.16069	.07370	-.04990	.08210	-.13230
2.499	GRADIENT	.00312	-.00068	.00116	-.00518	.00833	-.01357

RUN NO. 285/ 0   RNVL =   1.99   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
2.999	-8.600	.17290	-.11863	.06660	.04512	-.07490	.12310
2.999	-4.270	.15290	-.09945	.06770	.02113	-.03370	.05720
2.999	.060	.14490	-.09517	.06840	-.00013	-.00070	.00020
2.999	4.490	.15400	-.10319	.06790	-.02126	.03210	-.05270
2.999	8.620	.17030	-.11726	.06610	-.04547	.07410	-.12360
2.999	GRADIENT	.00023	-.00020	.00002	-.01487	.00756	-.01263

RUN NO. 273/ 0   RNVL =   1.99   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
3.502	-8.740	.13100	-.08825	.06170	.04198	-.07010	.11640
3.502	-5.540	.12390	-.08320	.06170	.03049	-.05100	.08480
3.502	-4.340	.11690	-.07273	.06160	.02021	-.03300	.05520
3.502	.090	.10700	-.06429	.06330	.00062	-.00290	.00470
3.502	4.500	.11690	-.07321	.06130	-.01844	.02700	-.04490
3.502	6.700	.12290	-.08121	.06090	-.02841	.04440	-.07370
3.502	8.960	.13090	-.08805	.05960	-.04201	.06400	-.10650
3.502	GRADIENT	.00000	-.00026	-.00003	-.00437	.01679	-.01132

DATE 08 OCT 73   TABULATED SOURCE FORCE DATA-1A9C

(GGNGD1)   (15 SEP 73)

AMES 87-757 1A9 O2A + S3 + T9 SRM BOOSTER

REFERENCE DATA

PARAMETRIC DATA

SREF	=	2.4210 SQ.FT.	XMRF	=	28.5300 IN.
LREF	=	39.8490 IN.	YMRF	=	.0000 IN.
BREF	=	39.8490 IN.	ZMRF	=	.0000 IN.
SCALE	=	.0300 SCALE			

BETA	=	.000	ORBINC =	.000
RUDDER	=	.000	ELEVON =	.000
RUDFLR	=	.000		

RUN NO. 281/ 0   RNVL =   1.51   GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CLM	CAF	CBL	CYN	CY
2.498	-8.140	-.07700	.02840	.01590	-.01409	.02346	-.04930
2.498	-6.110	-.05400	.01700	.01660	-.00988	.01106	-.02910
2.498	-4.090	-.03400	.00800	.01810	-.00632	-.00771	-.00110
2.498	-2.010	-.01800	.00240	.02340	-.00339	-.02578	.02070
2.498	.010	-.00700	-.00060	.02680	-.00138	-.03580	.03290
2.498	1.980	.00420	-.00350	.02920	.00063	-.03734	.03560
2.498	3.940	.01500	-.00600	.03160	.00274	-.03588	.03150
2.498	6.010	.02300	-.00660	.03280	.00421	-.02810	.01840
2.498	8.090	.03900	-.01230	.03480	.00713	-.01487	.00280
2.498		.00602	-.00170	.00165	.00111	-.00353	-.00404
GRADIENT							

RUN NO. 280/ 0   RNVL =   1.99   GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CLM	CAF	CBL	CYN	CY
2.999	-8.100	-.07900	.03380	.01280	-.01335	.01736	-.03880
2.999	-6.125	-.05100	.01960	.01440	-.00933	.00897	-.02530
2.999	-4.090	-.03200	.01010	.01660	-.00585	-.00564	-.00400
2.999	-1.990	-.01600	.00460	.02060	-.00293	-.02097	.01640
2.999	.020	-.00700	.00330	.02370	-.00138	-.03514	.02790
2.999	1.970	.00100	.00260	.02580	-.00018	-.03372	.03060
2.999	4.020	.00800	.00100	.02920	.00146	-.03104	.02530
2.999	6.070	.02200	.00320	.03030	.00266	-.02204	.01180
2.999	8.070	.01900	-.00410	.02860	.00348	-.01063	-.00470
2.999		.00472	-.00101	.00115	.00086	-.00316	.00362
GRADIENT							

RUN NO. 221/ 0   RNVL =   1.98   GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CLM	CAF	CBL	CYN	CY
3.502	-8.090	-.07400	.03370	.01160	-.01364	.01238	-.03940
3.502	-6.080	-.05600	.02520	.01290	-.01034	.00674	-.02840
3.502	-4.060	-.02900	.01290	.01650	-.00541	-.00402	-.00490
3.502	-2.020	-.02000	.01090	.01970	-.00449	-.01800	.01390
3.502	.010	-.01500	.00850	.02220	-.00284	-.02616	.02390
3.502	2.000	-.00600	.00660	.02460	-.00120	-.02960	.02700
3.502	4.020	.00250	.00470	.02510	.00027	-.02579	.02110
3.502	6.045	.00600	.00290	.02850	.00100	-.01663	.00800
3.502	8.080	.03130	-.00850	.02540	.00157	-.00595	-.00330
3.502		.00397	-.00099	.00110	.00	.00274	.00324
GRADIENT							

DATE 30 OCT 73   TABULATED SOURCE FORCE DATA-IASC

(B8N522)   (15 SEP 73)

AMES 87-757 IA9 O2A + S3 + T9 SRM BOOSTER

REFERENCE DATA

PARAMETRIC DATA

SREF =	2.4210 SQ.FT.	XREF =	28.5305 IN.		ALPHA =	-8.000	ORBINC =	.500
LREF =	39.8490 IN.	YREF =	.0000 IN.		RUDSER =	.000	ELEVON =	.000
BREF =	39.8495 IN.	ZREF =	.0000 IN.		RUDFLR =	.000		
SCALE =	.0300 SCALE							

RUN NO. 241/ 0   RVL = 1.55   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
2.498	-8.360	-.13595	.07290	.02430	-.02480	-.01875	.03460
2.498	-6.250	-.11900	.05670	.02190	-.02022	-.00991	.00790
2.498	-4.150	-.10900	.05110	.01920	-.01931	.00279	-.01710
2.498	-2.050	-.09700	.04350	.01710	-.01775	.01557	-.03640
2.498	2.190	-.06200	.01720	.01390	-.01134	.02616	-.05490
2.498	2.198	-.04900	.05810	.01470	-.00896	.02471	-.05490
2.498	4.336	-.04800	.01675	.01410	-.00878	.02102	-.05190
2.498	6.480	-.03220	-.00350	.01320	-.00585	.01259	-.04110
2.498	8.630	.00693	-.00529	-.00057	.00128	.00256	-.05443
	GRADIENT						

RUN NO. 231/ 0   RVL = 2.00   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
2.999	-8.510	-.12200	.06970	.02560	-.02242	-.01918	.01490
2.999	-6.360	-.12400	.06590	.02110	-.02278	-.01196	.00410
2.999	-4.220	-.10900	.05270	.01760	-.01839	-.00322	-.00650
2.999	-2.080	-.08900	.04280	.01520	-.01620	.00742	-.02490
2.999	2.230	-.05800	.01900	.01200	-.01061	.02090	-.04460
2.999	4.410	-.04700	.00640	.01090	-.00860	.01971	-.04520
2.999	6.600	.07100	-.03770	.01070	-.01299	.01874	-.04580
2.999	8.90	-.03400	.00180	.00950	-.00622	.01216	-.03740
2.999		.00600	-.00503	-.00077	.00117	.00273	-.05434
	GRADIENT						

RUN NO. 221/ 0   RVL = 1.99   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
3.502	-8.670	-.11600	.07030	.02710	-.02169	-.02295	.01710
3.502	-6.480	-.11900	.06230	.02370	-.02204	-.01374	.00600
3.502	-4.300	-.10400	.05640	.01680	-.01913	-.00617	-.00360
3.502	-2.120	-.08600	.04490	.01490	-.01583	.00317	-.01590
3.502	2.260	-.03800	.01440	.00860	-.00705	.01663	-.03620
3.502	4.450	-.03800	.01020	.00870	-.00705	.01681	-.03760
3.502	6.710	-.02300	.00840	.00890	-.00732	.01317	-.03240
3.502	8.940	-.01620	.00520	.00720	-.00669	.00849	-.02970
3.502		.00622	-.00561	-.00102	.00190	.00281	-.05441
	GRADIENT						

DATE 26 OCT 73

TABULATED SOURCE FORCE DATA-IA9C

AMES 87-737 [A9 O24 + S3 + T9 SEV BOOSTER]

(B84195) (15 SEP 73)

REFERENCE DATA

SREF =	2.4215 SQ.FT.	XMRF = 28.5350 IN.
LREF =	39.8490 IN.	YMRF = .0000 IN.
BREF =	39.8490 IN.	ZMRF = .0000 IN.
SCALE =	.0320 SCALE	

PARAMETRIC DATA

ALPHA =	-5.000	ORBINC =	.500
RUDDER =	.000	ELEVON =	.000
RUDFLR =	.000		

RUN NO. 242/ 0   RN/L = 1.50   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
2.498	-8.380	-.11100	.56160	.02770	-.02041	-.02107	.01420
2.498	-6.280	-.10100	.05400	.02380	-.01848	-.01152	.01470
2.498	-4.180	-.08900	.04410	.02010	-.01528	-.00251	-.00780
2.498	-2.080	-.07300	.03120	.02080	-.01335	.00029	-.02190
2.498	2.190	-.03800	.00550	.01540	-.02695	.01278	-.03170
2.498	4.320	-.02600	-.01140	.01030	-.00512	.01162	-.03370
2.498	4.320	-.51920	-.00700	.01700	-.00348	.00049	-.03050
2.498	6.460	-.01300	-.01200	.01490	-.00238	.00397	-.02600
2.498	8.610	.00720	-.00550	-.00063	.00135	.00164	-.00300
	GRADIENT						

RUN NO. 232/ 0   RN/L = 2.00   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
2.999	-8.520	-.14000	.07620	.02860	-.02071	-.02423	.02220
2.999	-6.370	-.09200	.05340	.02360	-.01693	-.01715	.01230
2.999	-4.230	-.08000	.04760	.02760	-.01656	-.00857	-.00050
2.999	-2.060	-.06300	.03190	.01710	-.01163	.00057	-.01300
2.999	2.230	-.03700	-.02200	.01180	.00677	.01384	-.03330
2.999	2.230	.07100	-.03780	.01110	.01299	.01277	-.03390
2.999	4.410	.01100	-.00740	.01270	-.00201	.01008	-.00360
2.999	6.590	-.01900	-.00550	.01120	-.00348	.00555	-.02590
2.999	8.770	.01955	-.02030	-.00113	.00359	.00257	-.00405
	GRADIENT						

RUN NO. 222/ 0   RN/L = 1.99   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
3.502	-8.680	-.09900	.05320	.03320	-.01621	-.02814	.02760
3.502	-6.490	-.09200	.05490	.02480	-.01656	-.02514	.01740
3.502	-4.300	-.07900	.04620	.02070	-.01455	-.01219	.00660
3.502	-2.120	-.06800	.03660	.01490	-.01234	-.00273	-.00620
3.502	2.260	-.04100	.01350	.01070	-.00760	.01254	-.02860
3.502	2.260	-.03100	.00540	.00910	-.00577	.01164	-.02830
3.502	4.480	-.02550	.00070	.00920	-.00467	.00992	-.02610
3.502	6.730	-.01300	-.00440	.00810	-.00248	.00514	-.02090
3.502	8.920	.00561	-.00477	-.00125	.00103	.00257	-.01420
	GRADIENT						

DATE 28 OCT 73   TABULATED SOURCE FORCE DATA-IA9C

AMES 87-717 IA9 OBA + S3 + T9 SRM BOOSTER

GENERAL   (19 SEP

REFERENCE DATA   PARAMETRIC DATA

SREF =	2.4210 SQ.FT.	XMRP =	28.??? IN.
LREF =	39.8490 IN.	YMRP =	.??? IN.
BREF =	39.8490 IN.	ZMRP =	.??? IN.
SCALE =	.0??? SCALE		

ALPHA = -4.000   DERINC = .??
RUDDER = .000   ELVON = .??
FLDFLR = .000

RUN NO. 243/ 0   RVL = 1.50   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
2.490	-8.390	-.0877?	.0499?	.0291?	-.01602	-.0239?	.0255?
2.490	-6.2??	-.078??	.0427?	.02660	-.01437	-.01997	.01660
2.490	-4.19?	-.0867?	.0322?	.0242?	-.01217	.0141?	.0289?
2.49?	-2.0??	-.049??	.01???	.0229?	-.0288?	-.00948	.0115?
2.49?	2.21?	-.0270?	-.0016?	.0189?	-.00366	-.00616	-.0269?
2.49?	4.3??	-.022??	-.0066?	.0189?	-.00220	-.00516	-.0079?
2.498	6.4??	-.015??	-.0125?	.0209?	-.00110	-.00526	-.0089?
2.493	8.6??	-.073??	-.0159?	.0173?	-.00055	-.00656	-.0088?
	GRADIENT	.0056?	-.0046?	-.0016?	.00119	.0010?	-.0018?

RUN NO. 233/ 0   RVL = 2.00   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
2.999	-8.525	-.1277?	.0715?	.0318?	-.02333	-.0308?	.0315?
2.999	-6.37?	-.1060?	.0578?	.02660	-.01949	-.02447	.02315
2.999	-4.22?	-.0810?	.0429?	.02330	-.01492	-.0173?	.0153?
2.999	-2.0??	-.0422?	.0201?	.0195?	-.00742	-.0128?	.0222?
2.999	2.29?	.0522?	-.0278?	.0135?	.00541	-.00093	-.0113?
2.999	4.42?	.0760?	-.0332?	.01440	.00110	-.00033	-.0142?
2.999	6.59?	.0950?	-.0356?	.0136?	.00146	.00061	-.0061?
2.999	8.760	.0910?	-.0339?	.0440?	-.00018	.0012?	-.0115?
	GRADIENT	.0123?	-.0773?	-.00111	.00226	.0282?	-.0731?

RUN NO. 223/ 0   RVL = 1.00   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
3.512	-8.6??	-.281??	.0553?	.0357?	-.01592	-.0355?	.0248?
3.512	-6.4??	-.0793?	.0480?	.0289?	-.01345	-.0285?	.0285?
3.512	-4.3??	-.0617?	.0373?	.0234?	-.01163	-.02028	.0286?
3.512	-2.12?	-.0411?	.0234?	.0209?	-.00943	-.01192	.0068?
3.512	2.25?	-.0295?	-.0266?	.0135?	-.00120	.00127	-.0122?
3.512	4.49?	-.0107?	-.0016?	.00970	-.00321	.00233	-.0142?
3.512	6.69?	-.012??	-.0246?	.01110	-.00235	.0019?	-.0147?
3.512	8.9??	-.0120?	-.0070?	.0097?	-.00163	-.00031	-.0119?
	GRADIENT	.0462?	-.0011?	-.00159	.00114	.0265?	-.0238?

DATE 28 OCT 73   TABULATED SOURCE FORCE DATA-IA9C

(060105)   (15 SEP 3)

AXES 67-797 IA9 02A + S3 + T9 SRM BOOSTER

REFERENCE DATA

SREF =	2.4210 SQ.FT.	XMRF = 28.5370 IN.
LREF =	39.8490 IN.	YMRF = .0070 IN.
BREF =	39.8490 IN.	ZMRF = .0090 IN.
SCALE =	.0320 SCALE	

PARAMETRIC DATA

ALPHA =	-2.000	ORBINC = .00
RUDDER =	.000	ELEVON = .00
RUDFLR =	.000	

RUN NO. 244/ 0   RNVL = 1.50   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
2.498	-8.370	-.06300	.07970	.03280	-.01160	-.04010	.04610
2.498	-6.290	-.05300	.05960	.03570	-.00980	-.03582	.03790
2.498	-4.140	-.04200	.02190	.02730	-.00778	-.03549	.03190
2.498	-2.020	-.02800	.01010	.02430	-.00522	-.02805	.02470
2.498	2.200	-.00900	-.010.	.02160	-.00175	-.02085	.01620
2.498	2.250	-.00200	-.00900	.02080	-.00037	-.01351	.01290
2.498	4.340	-.00220	-.01450	.02100	.00091	-.01324	.00550
2.498	6.470	.01300	-.01940	.02020	.00191	-.00895	.0039.
2.498	8.600	.01180	-.00358	-.00074	.00086	.00133	-.00225
	GRADIENT	.01467					

RUN NO. 234/ 0   RNVL = 1.99   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
2.999	-8.520	-.06120	.04350	.03460	-.01126	-.04343	.05120
2.999	-6.370	-.05200	.03560	.03250	-.00961	-.03855	.04360
2.999	-4.210	-.04300	.02660	.02710	-.00797	-.03356	.03600
2.999	-2.050	-.03100	.01660	.02480	-.00577	-.02714	.02670
2.999	2.200	-.00800	-.00270	.01780	-.00165	-.01776	.01310
2.999	2.270	-.00200	-.00890	.01750	-.00037	-.01450	.00740
2.999	4.430	.01100	-.01120	.01780	.00218	-.01106	.00140
2.999	6.530	.01300	-.01460	.01610	.00291	-.01145	.00100
2.999	8.750	.01900	-.00414	-.00121	.00399	.00215	-.00028
	GRADIENT	.00481					

RUN NO. 224/ 0   RNVL = 1.99   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
3.502	-8.600	-.06100	.04630	.03610	-.01126	-.04410	.05180
3.502	-6.450	-.05200	.03910	.03240	-.00990	-.03800	.04240
3.502	-4.290	-.04500	.03120	.02810	-.00833	-.03174	.03300
3.502	-2.090	-.04600	.02590	.02370	-.00852	-.02464	.02850
3.502	2.290	-.01300	.00270	.01600	-.00248	-.01156	.00540
3.502	2.290	-.00200	-.00490	.01290	-.00139	-.00895	.00110
3.502	4.490	.01700	-.00620	.01250	.00101	-.00599	-.00300
3.502	5.690	.01500	-.01060	.00950	-.00028	-.00714	-.00290
3.502	8.970	.01900	-.00444	-.00103	.00091	.00057	-.00379
	GRADIENT						

DATE 08 OCT 73   TABULATED SOURCE FORCE DATA-IA9C

08 MAY 1980 (15 SEP 72)

AMES 27-717 IA9 02A + S3 + T9 SRM BOOSTER

REFERENCE DATA

SREF =	2.4215 SQ.FT.	XMRF = 28.3300 IN.
LREF =	39.8490 IN.	YMRF = .0000 IN.
BREF =	39.8490 IN.	ZMRF = .0000 IN.
SCALE =	.0300 SCALE	

PARAMETRIC DATA

ALPHA =	.000	ORBINC = .525
RUDDER =	.000	ELEVON = .000
RUDFLR =	.000	

RUN NO. 245/ 0   RVL = 1.99   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CAF	CLM	CBL	CYN	CY
2.499	-8.395	-.04500	.03590	.02990	-.00742	-.05116	.03870
2.499	-6.230	-.01900	.03450	.01570	-.00758	-.04543	.03175
2.498	-4.125	-.02400	.03090	.01480	-.00449	-.04138	.04485
2.498	-2.000	-.01990	.02890	.00690	-.01284	-.03761	.03850
2.498	2.240	.00170	.02380	-.02340	.00145	-.03015	.02750
2.498	4.360	.00300	.02370	-.00360	.00045	-.02561	.02655
2.498	6.480	.01200	.02160	-.01510	.07210	-.02275	.03590
2.498	8.615	.01350	.02230	-.01680	.00229	-.02608	.03510
2.498	GRADIENT	.00340	-.00093	-.00302	.00062	.00184	-.00281

RUN NO. 235/ 0   RVL = 2.00   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CAF	CLM	CBL	CYN	CY
2.999	-8.500	-.04300	.03800	.01490	-.05797	-.05475	.03870
2.999	-6.345	-.03600	.03490	.02830	-.05669	-.05343	.05225
2.999	-4.180	-.02900	.03030	.02130	-.05541	-.04314	.04480
2.999	-2.095	-.02200	.02640	.01310	-.00376	-.04313	.03830
2.999	2.290	-.00200	.02200	-.00380	-.00047	-.05	.02255
2.999	2.290	.00300	.01780	-.00880	.00055	-.02	.01990
2.999	4.440	.00700	.01860	-.01110	.00128	-.14	.02070
2.999	6.590	.01100	.01780	-.01470	.00281	-.016	.00700
2.999	8.760	.00380	-.00136	-.00358	.00073	-.022	.00731
2.999	GRADIENT						

RUN NO. 225/ 0   RVL = 1.99   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CAF	CLM	CBL	CYN	CY
3.502	-8.660	-.04100	.04170	.03660	-.05760	-.05213	.03910
3.502	-6.480	-.03500	.03750	.03080	-.00650	-.04626	.050
3.502	-4.270	-.04000	.02980	.02890	-.05742	-.03932	.53
3.502	-2.080	-.03500	.02840	.02230	-.05659	-.03280	.567
3.502	2.310	-.00500	.01740	.02020	-.00191	-.02150	.055
3.502	4.500	.01900	.01640	-.01260	.00038	-.03780	.0651
3.502	6.690	.00100	.01510	-.00580	.00018	-.01264	.7780
3.502	8.900	.02200	.02370	-.01640	.07384	-.00111	.0658
3.502	GRADIENT	.00670	-.00171	-.00379	.00123	.00257	-.0234

DATE 26 OCT 73   TABULATED SOURCE FORCE DATA-IA9C

    (08N197)   (15 SEP 73

    · AMES 67-757 IA9 O2A + S3 + T9 SRM BOOSTER

PARAMETRIC DATA

REFERENCE DATA

SREF =	2.4210 SQ.FT.	XREF =	28.5300 IN.
LREF =	39.8490 IN.	YREF =	.0000 IN.
BREF =	39.8490 IN.	ZREF =	.0000 IN.
SCALE =	.0300 SCALE		

ALPHA =	2.000	ORBINC =	.50
RUDDER =	.000	ELEVON =	.00
RUDFLR =	.000	

RUN NO. 246/ 0 RN/L = 1.50 GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
2.498	-8.340	-.01920	.02820	.03980	-.00358	-.05744	.06490
2.498	-6.220	-.01400	.01450	.03660	-.00266	-.05220	.05740
2.498	-4.170	-.00820	.00860	.03380	-.00156	-.04748	.05090
2.498	-1.980	-.00300	.00280	.03140	-.00055	-.04284	.04320
2.498	2.290	.01000	-.00920	.02810	.00183	-.03304	.02870
2.498	4.360	.01400	-.01210	.02540	.00256	-.02735	.02110
2.498	6.480	.01600	-.01420	.02500	.00293	-.02427	.01560
2.498	8.620	.01800	-.01580	.02340	.00329	-.02428	.01410
GRADIENT		.00270	-.00252	-.00095	.00050	.00235	-.00347

RUN NO. 236/ 0 RN/L = 2.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
2.999	-8.480	-.02100	.02400	.04050	-.00394	-.05421	.06120
2.999	-6.320	-.01600	.01960	.03440	-.00303	-.04939	.05490
2.999	-4.170	-.01200	.01450	.03330	-.00230	-.04469	.04770
2.999	-2.010	-.00300	.00820	.02980	-.00120	-.04002	.04070
2.999	2.290	.00500	.00330	.02340	.00081	-.02978	.02600
2.999	4.450	.01000	-.00870	.02240	.00173	-.02460	.01820
2.999	6.670	.01100	-.00950	.01920	.00191	-.01901	.01110
2.999	8.760	.01500	-.01310	.01850	.00264	-.01578	.00550
GRADIENT		.00255	-.00269	-.00130	.00047	.00234	-.00342

RUN NO. 226/ 0 RN/L = 1.99 GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
3.502	-8.650	-.02100	.02590	.04270	-.00394	-.05361	.06080
3.502	-6.460	-.01800	.02230	.03580	-.00359	-.04705	.05240
3.502	-4.270	-.01500	.01760	.03090	-.00284	-.04025	.04330
3.502	-2.070	-.01000	.01230	.03000	-.00193	-.03609	.03680
3.502	2.310	.00100	-.00370	.02030	.00018	-.02361	.01910
3.502	4.550	.00600	-.00500	.01800	.00110	-.01899	.01250
3.502	6.710	.01100	-.00760	.01610	.00201	-.01395	.00560
3.502	8.950	.01500	-.01240	.01280	.00264	-.01574	.00110
GRADIENT		.00242	-.00265	-.00162	.00046	.00251	-.00361

DATE 28 OCT 73   TABULATED SOURCE FORCE DATA-IA9C

AMES 87-777 IA9 O2A + S3 + T9 SRM BOOSTER

REFERENCE DATA

				PARAMETRIC DATA	
SREF =	2.4210 SQ.FT.	XMRF =	28.5320 IN.	ALPHA = 4.000	ORBINC = .500
LREF =	39.8490 IN.	YMRF =	.0000 IN.	RUDDER = .000	ELEVON = .000
BREF =	39.8490 IN.	ZMRF =	.0000 IN.	RUDFLR = .000	
SCALE =	.0300 SCALE				

RUN NO. 247/ 0   RNVL = 1.99   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
2.498	-8.320	.00100	.01130	.04330	.00008	-.05707	.06260
2.498	-6.210	.00600	.00990	.03990	.00100	-.05183	.05470
2.498	-4.100	.00700	.00240	.03610	.00128	-.04690	.04690
2.498	-1.985	.01000	-.00130	.03440	.00183	-.04179	.04090
2.498	2.220	.01700	-.00940	.03010	.00311	-.02981	.02260
2.498	2.220	.01800	-.01090	.02690	.00329	-.02425	.01450
2.498	4.370	.02200	-.01350	.02900	.00402	-.02097	.05990
2.498	6.490	.02400	-.01560	.02360	.00439	-.01982	.00700
2.498	8.620	.00137	-.00164	-.00111	.00025	.00267	-.00388
GRADIENT							

RUN NO. 257/ 0   RNVL = 2.00   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
2.999	-8.470	.00200	.01310	.04290	.00027	-.05287	.05850
2.999	-6.320	.00300	.01050	.03740	.00045	-.04834	.05220
2.999	-4.170	.00400	.00770	.03570	.00063	-.04303	.04410
2.999	-2.010	.00500	.00490	.03380	.00091	-.03818	.03650
2.999	2.290	.01200	-.00450	.02510	.00220	-.02569	.01920
2.999	2.290	.01500	-.00760	.02260	.00274	-.02103	.01240
2.999	4.430	.01600	-.00810	.02070	.00293	-.01399	.00340
2.999	6.600	.02200	-.01380	.01980	.00402	-.01289	.00160
2.999	8.770	.00135	-.00185	-.00162	.00026	.00262	-.00375
GRADIENT							

RUN NO. 227/ 0   RNVL = 1.99   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
3.502	-8.640	-.00100	.01510	.04260	-.00028	-.05029	.05570
3.502	-6.450	-.00500	.01880	.03740	-.00284	-.04434	.04770
3.502	-4.260	.00200	.01010	.03520	.00027	-.03864	.03990
3.502	-2.070	.00200	.00840	.02970	.00037	-.03323	.03200
3.502	2.310	.00200	.00140	.02280	.00037	-.02005	.01330
3.502	4.500	.01000	-.00460	.01490	.00183	-.01463	.00700
3.502	6.710	.01400	-.00760	.01650	.00256	-.01992	.00330
3.502	6.710	.03700	-.02070	.01330	.00677	-.00343	-.00120
3.502	8.910	.00075	-.00165	-.00222	.00014	.00279	-.00382
GRADIENT							

DATE 08 OCT 73   TABULATED SOURCE FORCE DATA-IA9C

(88N159)   (15 SEP 73)

AMES 87-777 IA9 22A + S3 + T9 SRM BOOSTER

REFERENCE DATA

			PARAMETRIC DATA	
SREF =	2.4210 SQ.FT.	XMRF = 28.5520 IN.	ALPHA = 6.000	ORBINC = .000
LREF =	39.8490 IN.	YMRF = .0000 IN.	RUDDER = .000	ELEVON = .000
BREF =	39.8490 IN.	ZMRF = .0000 IN.	RUDFLR = .000	
SCALE =	.0300 SCALE			

RUN NO. 248/ 0   RN/L = 1.50   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
2.498	-8.310	.02920	.00090	.04430	.00421	-.05390	.05520
2.498	-6.220	.02590	-.00200	.04190	.00457	-.04757	.04680
2.498	-4.090	.02520	-.00420	.03780	.00457	-.04052	.03710
2.498	-1.930	.02520	-.00560	.03640	.00457	-.03526	.02870
2.499	2.240	.02700	-.01090	.03060	.00494	-.02163	.01950
2.498	4.370	.02900	-.01200	.02820	.00512	-.01746	.00280
2.498	6.500	.03170	-.01350	.02640	.00549	-.01423	-.00230
2.498	8.630	.03330	-.01720	.02490	.00614	-.01328	-.00410
2.498	GRADIENT	.00038	-.00099	-.00117	.00007	.00282	-.00415

RUN NO. 238/ 0   RN/L = 2.00   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
2.999	-8.470	.02920	.00220	.04380	.00411	-.04701	.04930
2.999	-6.310	.02290	.00170	.03980	.00402	-.04108	.04080
2.999	-4.170	.02100	.00030	.03490	.00384	-.03488	.03260
2.999	-2.020	.02020	-.00240	.03230	.00366	-.02961	.02440
2.999	2.280	.02200	-.00700	.02830	.00402	-.01748	.00620
2.999	4.450	.02100	-.00690	.02210	.00384	-.01324	.00000
2.999	6.610	.02300	-.00850	.02200	.00421	-.00836	-.00620
2.999	8.780	.02900	-.01540	.02110	.00531	-.00716	-.00370
2.999	GRADIENT	.00009	-.00097	-.00137	.00202	.00257	-.00387

RUN NO. 226/ 0   RN/L = 1.99   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
3.502	-8.640	.02900	.02980	.04280	.00055	-.04353	.04560
3.502	-6.440	.02200	.03190	.04020	.00366	-.03845	.03820
3.502	-4.260	.01700	.03280	.03710	.00311	-.03149	.02780
3.502	-2.080	.01500	.02310	.03070	.00274	-.02532	.02010
3.502	2.300	.01600	-.02380	.02070	.00293	-.01069	.00030
3.502	4.510	.01200	-.02340	.02090	.00220	-.00882	-.00410
3.502	6.710	.02200	-.02900	.01730	.00402	-.01456	-.00890
3.502	8.920	.02900	-.01680	.01530	.00531	-.00560	-.00750
3.502	GRADIENT	-.00041	-.00038	-.00193	-.00008	.00273	-.00381

DATE 28 OCT 75   TABULATED SOURCE FORCE DATA-1A9C

AMES 87-T37 1A9 O2A + S3 + T9 SRM BOOSTER   (B8M19)   (15 SEP 75

PARAMETRIC DATA

REFERENCE DATA

SREF =	2.4210 SQ.FT.	XMRF =	29.5300 IN.	ALPHA =	8.000	ORBINC =	.000
LREF =	39.8490 IN.	YMRF =	.0000 IN.	RUDDER =	.000	ELEVON =	.000
BREF =	39.8490 IN.	ZMRF =	.0000 IN.	RUDFLR =	.000		
SCALE =	.0300 SCALE						

RUN NO. 249/ 0   RN/L = 1.50   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
2.498	-8.300	.04800	-.01110	.04600	.00878	-.04462	.04180
2.498	-6.200	.04700	-.01270	.04200	.00860	-.03708	.03170
2.498	-4.120	.04500	-.01240	.03940	.00823	-.02941	.02020
2.498	-2.000	.04300	-.01230	.03750	.00787	-.02226	.00910
2.498	2.240	.04200	-.01590	.03170	.00732	-.01090	-.00840
2.498	2.240	.03700	-.01330	.02770	.00677	-.00827	-.01280
2.498	4.370	.04100	-.01660	.02710	.00750	-.00626	-.01640
2.498	6.510	.04500	-.02090	.02590	.00823	-.00524	-.01770
2.498	8.640	-.00090	-.00021	-.00138	-.00016	.00253	-.00394
	GRADIENT						

RUN NO. 239/ 0   RN/L = 2.00   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
2.999	-8.450	.04500	-.00970	.04540	.00823	-.03881	.03620
2.999	-6.310	.04200	-.00870	.04100	.00768	-.03180	.02690
2.999	-4.180	.04000	-.00840	.03580	.00732	-.02375	.01600
2.999	-2.030	.03400	-.00660	.03310	.00622	-.01796	.00660
2.999	2.280	.03570	-.01200	.02660	.00640	-.00687	-.01050
2.999	4.450	.03300	-.01080	.02440	.00614	-.00386	-.01580
2.999	4.450	.03500	-.01350	.02130	.00640	-.00100	-.01690
2.999	6.620	.04500	-.02070	.02100	.00787	-.00024	-.02010
2.999	8.790	-.00060	-.00047	-.00036	-.00011	.00236	-.00373
	GRADIENT						

RUN NO. 229/ 0   RN/L = 1.99   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
3.502	-8.630	.04300	-.00940	.04560	.00787	-.03524	.03220
3.502	-6.440	.04000	-.00900	.04000	.00732	-.02822	.02290
3.502	-4.260	.03600	-.00790	.03430	.00659	-.02197	.01490
3.502	-2.080	.03300	-.00620	.03210	.00604	-.01647	.00690
3.502	2.300	.03000	-.01050	.02440	.00549	-.00566	-.00800
3.502	2.300	.01800	-.00720	.02100	.00329	-.00224	-.01370
3.502	4.510	.01800	-.00900	.01650	.00183	.00088	-.01750
3.502	6.750	.02900	-.02110	.01620	.05713	-.00216	-.01270
3.502	8.940	-.00178	-.00021	-.00156	-.00033	.00229	-.00329
	GRADIENT						

DATE 08 OCT 73   TABULATED SOURCE FORCE DATA-IA9C

(IBN111)   (15 SEP 73)

AMES 87-717 IA9 O2A + S3 + T9 SRM BOOSTER

REFERENCE DATA

SREF =	2.42	SQ.FT.	XMRF =	28.5390 IN.
LREF =	39.8	IN.	YMRF =	.0000 IN.
BREF =	39.7	IN.	ZMRF =	.0000 IN.
SCALE =		.00 SCALE		

PARAMETRIC DATA

ALPHA =	-8.000	ORBINC =	.000
RUDDER =	-15.000	ELEVON =	.000
RUDFLR =	.000		

RUN NO. 267/ 0   RNVL = 1.90   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
2.498	-8.340	-.14900	.07520	.02550	-.02571	-.01706	.00990
2.498	-6.240	-.12800	.06590	.02180	-.02382	-.00809	-.00360
2.498	-4.140	-.11600	.05640	.01910	-.02132	.00931	-.02180
2.498	.060	-.08100	.03040	.01570	-.01482	.02493	-.05260
2.498	4.340	-.05700	.00960	.01630	-.00970	.02582	-.05790
2.498	6.480	-.14200	.00320	.01470	-.00768	.02161	-.05570
2.498	6.640	-.03500	.02210	.01390	-.00640	.01296	-.04350
2.498	8.640	-.03500	.00552	-.0003	.00137	.00245	-.00425
	GRADIENT	.00743					

RUN NO. 256/ 0   RNVL = 2.00   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
2.999	-8.510	-.11800	.06820	.02640	-.02169	-.01993	.01660
2.999	-6.370	-.10700	.05910	.02130	-.01967	-.01290	.00630
2.999	-4.230	-.09400	.04980	.01820	-.01730	-.00413	-.00640
2.999	.050	-.07200	.03060	.01370	-.01327	.01609	-.03640
2.999	4.410	-.04500	.00990	.01120	-.00823	.01935	-.04340
2.999	6.690	-.03900	.01920	.01120	-.00713	.01785	-.04320
2.999	8.790	-.03300	.00130	.01100	-.00604	.01119	-.03540
	GRADIENT	.00567	-.01462	-.00081	.03105	.00268	-.00427

RUN NO. 255/ 0   RNVL = 2.00   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
3.502	-8.670	-.11500	.06880	.02860	-.02114	-.01963	.01410
3.502	-6.480	-.10100	.05910	.02510	-.01858	-.01349	.00530
3.502	-4.300	-.09300	.05210	.02110	-.01711	-.02616	-.00520
3.502	.060	-.07000	.03250	.01160	-.01281	.01288	-.03120
3.502	4.480	-.04600	.01310	.00860	-.00842	.01793	-.03970
3.502	6.710	-.03800	.00700	.00920	-.00695	.01402	-.03620
3.502	8.940	-.03300	.00370	.00800	-.00604	.00914	-.03150
3.502		.00555	-.00444	-.00142	.02099	.00274	-.00392
	GRADIENT						

DATE 28 OCT 73   TABULATED SOURCE FORCE DATA-IA9C

AMES 87-707 IA9 O2A + S3 + T9 SRM BOOSTER   (BDM12)   (15 SEP 73)

REFERENCE DATA   PARAMETRIC DATA

SREF =	2.4215 SQ.FT.	XMRP =	28.5390 IN.
LREF =	39.0490 IN.	YMRP =	.0000 IN.
BREF =	39.0490 IN.	ZMRP =	.0000 IN.
SCALE =	.0300 SCALE		

ALPHA =   -4.000   GSINC =   .500
RUDDER = -15.000   ELEVON =   .000
RUDFLR =   .000

RUN NO. 266/ 0   RNVL =   1.50   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
2.498	-8.580	-.09200	.05260	.03080	-.01695	-.02743	.02990
2.498	-6.260	-.08200	.04470	.02660	-.01510	-.02087	.01930
2.498	-4.150	-.07500	.03460	.02220	-.01291	-.01420	.00940
2.498	.090	-.03700	.00950	.02140	-.03687	-.00721	-.00330
2.498	4.340	-.01700	-.00440	.01840	-.00321	-.01437	-.00940
2.498	6.470	-.02300	-.00330	.01880	-.02421	-.00384	-.01140
2.498	8.610	-.00300	-.01600	.01860	-.00055	-.00621	-.01040
	GRADIENT	.00624	-.00459	-.00068	.00114	.00116	-.00221

RUN NO. 257/ 0   RNVL =   2.00   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
2.999	-8.550	-.07500	.05180	.03000	-.01455	-.03229	.03620
2.999	-6.380	-.07100	.04400	.02780	-.01309	-.02659	.02770
2.999	-4.220	-.05800	.03350	.02320	-.01071	-.01914	.01710
2.999	.080	-.03500	.00910	.01820	-.00559	-.00613	-.00300
2.999	4.410	-.01200	-.00630	.01390	-.00230	-.01104	-.01190
2.999	6.580	-.01600	-.01020	.01420	-.00110	-.00000	-.01420
2.999	8.750	-.00300	-.01280	.01430	-.00055	-.00232	-.01250
	GRADIENT	.00533	-.00461	-.00108	.00097	.00210	-.00336

RUN NO. 251/ 0   RNVL =   1.98   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
3.502	-8.690	-.07700	.05340	.03540	-.01419	-.03548	.03890
3.502	-6.490	-.06200	.04560	.03140	-.01254	-.02874	.02990
3.502	-4.360	-.05430	.03510	.02610	-.00998	-.02127	.01900
3.502	.070	-.03370	.01360	.01760	-.00604	-.00412	-.00470
3.502	4.480	-.01370	-.00350	.01000	-.00238	-.00297	-.01520
3.502	6.690	-.00300	-.00610	.01260	-.00165	-.00239	-.01660
3.502	8.900	-.00800	-.00820	.01300	-.00146	-.00058	-.01420
	GRADIENT	.00467	-.00440	-.00183	.00087	.00276	-.00389

DATE 28 OCT 73   TABULATED SOURCE FORCE DATA-IA9C

AMES I7-T? IA9 O2A + S3 + T9 SRM BOOSTER

(BBW13) (15 SEP 73)

REFERENCE DATA

			PARAMETRIC DATA	
SREF =	2.4210 SQ.FT.	XORF = 28.5300 IN.	ALPHA = .000	ORBINC = .000
LREF =	39.0490 IN.	YMRF = .0000 IN.	RUDDER = -15.000	ELEVON = .000
BREF =	39.0490 IN.	ZMRF = .0000 IN.	RUDFLR = .000	
SCALE =	.0200 SCALE			

RUN NO. 265/ 0 RNVL = 1.50 GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
2.498	-8.340	-.04450	.03120	.03680	-.00815	-.05133	.05860
2.498	-6.220	-.03600	.02400	.03440	-.00669	-.04639	.05140
2.498	-4.110	-.02770	.01600	.03260	-.00504	-.04176	.04460
2.498	.130	-.00990	-.00010	.02790	-.00165	-.03259	.03090
2.498	.130	.00900	-.01060	.02420	.00091	-.02583	.02020
2.498	4.360	.00900	-.01370	.02410	.00165	-.02291	.01510
2.498	6.480	.01370	-.01690	.02220	.00238	-.02406	.01480
2.498	8.610	.01370	-.00314	-.00099	.00070	.00168	-.00288
	GRADIENT	.02378					

RUN NO. 258/ 0 RNVL = 1.99 GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
2.999	-8.490	-.04100	.03420	.03820	-.00760	-.04969	.05610
2.999	-6.330	-.03500	.02780	.03390	-.00650	-.04550	.05090
2.999	-4.160	-.02820	.02170	.03200	-.00522	-.04085	.04320
2.999	.130	-.00990	.00320	.02590	-.00175	-.03013	.02760
2.999	.130	.00420	-.00910	.01980	.00063	-.02122	.01510
2.999	4.440	.00420	-.01090	.01650	.00110	-.01778	.00980
2.999	6.600	.01000	-.01440	.01650	.00183	-.01645	.00680
2.999	8.760	.00900	-.00343	-.00142	.00068	.00228	-.00326
	GRADIENT	.00371					

RUN NO. 252/ 0 RNVL = 1.99 GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
3.502	-8.660	-.03500	.03390	.04080	-.00690	-.05076	.05660
3.502	-6.470	-.03500	.02850	.03610	-.00559	-.04520	.04940
3.502	-4.280	-.02400	.02200	.03290	-.00449	-.03902	.04580
3.502	.110	-.01100	.00720	.02200	-.00211	-.02552	.02340
3.502	4.520	.00330	-.00660	.01420	.00045	-.01790	.01250
3.502	4.520	.00600	-.00840	.01440	.00100	-.01233	.00900
3.502	6.690	.00900	-.01170	.01410	.00165	-.01068	.00190
3.502	8.890	.00908	-.00326	-.00213	.00056	.00247	-.00322
	GRADIENT						

DATE 26 OCT 73   TABULATED SOURCE FORCE DATA-IASC

(BBN114)   (15 SEP 73)

AMES 87-707 IA9 O2A + S3 + T9 SRM BOOSTER

PARAMETRIC DATA

ALPHA =   4.000   ORBINC =   .500
RUDDER = -15.000   ELEVON =   .000
RUDFLR =   .000

REFERENCE DATA

SREF =	2.4210 SQ.FT.	XMRP =	28.9300 IN.
LREF =	39.8490 IN.	YMRP =	.0000 IN.
BREF =	39.8490 IN.	ZMRP =	.0000 IN.
SCALE =	.0300 SCALE		

RUN NO. 264/ 0   RNVL = 1.50   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
2.498	-8.370	-.00200	.01250	.04320	-.00037	-.05650	.06100
2.498	-6.200	.00200	.00740	.03990	.00027	-.05100	.05280
2.498	-4.090	.00500	.00360	.03620	.00091	-.04552	.04510
2.498	.130	.01100	-.00430	.03200	.00251	-.03545	.03540
2.498	4.330	.01500	-.00910	.02810	.00274	-.02484	.01480
2.498	6.500	.01700	-.01120	.02600	.00311	-.02116	.00930
2.498	8.620	.02100	-.01430	.02350	.00384	-.02010	.00750
2.498	GRADIENT	.00118	-.00190	-.00096	.00022	.00244	-.00358

RUN NO. 259/ 0   RNVL = 1.99   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
2.999	-8.460	.00100	.01300	.04620	.00008	-.05295	.05770
2.999	-6.310	.00200	.01080	.04320	.00027	-.04865	.05150
2.999	-4.160	.00600	.00710	.03680	.00110	-.04253	.04270
2.999	.140	.00500	.00080	.02960	.00146	-.03152	.02670
2.999	4.460	.01500	-.00750	.02150	.00274	-.01993	.01090
2.999	6.610	.01600	-.00830	.02170	.00293	-.01357	.00230
2.999	5.775	.02100	-.01380	.01940	.00384	-.01285	.00320
2.999	GRADIENT	.00104	-.00169	-.00178	.00019	.00262	-.00369

RUN NO. 255/ 0   RNVL = 1.99   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
3.502	-8.650	.00400	.01270	.04450	.00063	-.05204	.05430
3.502	-6.451	.00600	.01000	.03890	.00120	-.04412	.04650
3.502	-4.270	.00600	.00870	.03450	.00160	-.03831	.03860
3.502	.110	.00800	.00170	.02750	.00165	-.02603	.02130
3.502	4.500	.01500	-.00680	.01930	.00274	-.01433	.00470
3.502	6.700	.01600	-.00840	.01490	.00293	-.00855	-.00160
3.502	8.900	.02200	-.01490	.01440	.00402	-.00923	-.00160
3.502	GRADIENT	.00103	-.00169	-.00173	.00020	.00273	-.00387

DATE 30 OCT 73   TABULATED SOURCE FORCE DATA-IA9C

(08N815)   (15 SEP 73)

AMES 87-797 1A9 O2A + S3 + T9 SRM BOOSTER

REFERENCE DATA

				PARAMETRIC DATA		
SREF =	2.4210 SQ.FT.	XMRP =	28.5770 IN.	ALPHA =	6.000	ORBINC = .000
LREF =	39.8490 IN.	YMRP =	.0000 IN.	RUDDER =	-15.000	ELEVON = .000
BREF =	39.8490 IN.	ZMRP =	.0000 IN.	RUDFLR =	.000	
SCALE =	.0300 SCALE					

RUN NO. 263/ 0 RNVL = 1.50 GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
2.498	-8.300	.02100	.02210	.04500	.00384	-.05292	.05350
2.498	-6.190	.02200	-.00090	.04180	.00402	-.04645	.04430
2.498	-4.060	.02100	-.00260	.03920	.00384	-.03947	.03430
2.498	.130	.02500	-.00540	.03310	.00366	-.02746	.01700
2.498	4.370	.02490	-.00930	.02580	.00439	-.01695	.00060
2.498	6.500	.02700	-.01220	.02800	.00494	-.01372	-.00390
2.498	8.600	.03000	-.01600	.02580	.00549	-.01192	-.00650
2.498	GRADIENT	-.00036	-.00079	-.00111	.00007	.00266	-.00399

RUN NO. 260/ 0 RNVL = 2.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
2.999	-9.490	.02500	.00250	.04430	.00411	-.04680	.04860
2.999	-6.310	.02100	.00210	.04020	.00384	-.04095	.04040
2.999	-4.160	.02300	-.00040	.03630	.00421	-.03474	.03140
2.999	.130	.02200	-.00320	.03090	.00366	-.02335	.01460
2.999	4.460	.02100	-.00660	.02520	.00384	-.01551	-.00080
2.999	6.620	.02300	-.00880	.02290	.00421	-.00859	-.00700
2.999	8.780	.02500	-.01560	.02120	.00531	-.00678	-.00980
2.999	GRADIENT	-.00023	-.00074	-.00129	-.00004	.00245	-.00374

RUN NO. 254/ 0 RNVL = 1.99 GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
3.502	-8.540	.02500	.00080	.04610	.00447	-.04403	.04510
3.502	-6.450	.02500	-.00010	.04030	.00457	-.03967	.03810
3.502	-4.270	.02200	.00060	.03530	.00402	-.03136	.02810
3.502	.500	.02100	-.00340	.02760	.00384	-.01745	.00930
3.502	4.500	.02400	-.00820	.01780	.00439	-.00816	-.00420
3.502	6.700	.02600	-.01170	.02200	.00476	-.00542	-.00840
3.502	8.920	.03000	-.01840	.01660	.00614	-.00564	-.00750
3.502	GRADIENT	-.00023	-.00190	-.00220	-.00004	.00264	-.00166

CATE 28 OCT 72   TABULATED SOURCE FORCE DATA-IA9C

(0304110)   (15 SEP 73)

AMES 87-757 IA9 CRA + S3 + T9 SRM BOOSTER

REFERENCE DATA

				PARAMETRIC DATA	
SREF =	2.4210 SQ.FT.	XMRF =	28.5300 IN.	ALPHA =	8.000	ORBINC =	.500
LREF =	37.8492 IN.	YMRF =	.0000 IN.	RUDDER =	-15.000	ELEVON =	.200
BREF =	79.8495 IN.	ZMRF =	.0000 IN.	RUDFLR =	.000		
SCALE =	.0300 SCALE						

RUN NO. 262/ 0   RNVL = 1.50   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
2.498	-8.205	.04705	-.00910	.04740	.00960	-.04447	.04060
2.498	-6.190	.05100	-.01430	.04360	.00933	-.03678	.03030
2.498	-4.090	.04650	-.01320	.04113	.00842	-.02972	.01910
2.498	.110	.03905	-.01225	.03560	.00713	-.01581	-.00810
2.498	4.390	.03900	-.01190	.03000	.00640	-.00799	-.01420
2.498	6.520	.03900	-.01580	.02680	.00713	-.00560	-.01720
2.498	6.655	.04400	-.02230	.02670	.00695	-.00378	-.02000
GRADIENT		-.00130	.00015	-.00131	-.00024	.00244	-.00392

RUN NO. 261/ 0   RNVL = 1.99   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
2.999	-8.450	.04400	-.00830	.04760	.00805	-.03681	.03590
2.999	-6.310	.04250	-.00880	.04130	.0.768	-.03167	.02690
2.999	-4.170	.04430	-.00840	.03590	.00732	-.02337	.01530
2.999	.110	.03620	-.01060	.03140	.00659	-.01174	-.00340
2.999	4.460	.03200	-.01080	.02410	.00585	-.00341	-.01680
2.999	6.630	.03900	-.01370	.02320	.00640	-.00134	-.01990
2.999	8.800	.04200	-.02150	.02050	.00768	.00015	-.00990
GRADIENT		-.00093	-.00128	-.00137	-.00017	.00231	-.00372

RUN NO. 255/ 0   RNVL = 1.99   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
3.502	-8.630	.04800	-.01170	.04560	.00878	-.03548	.03240
3.502	-6.450	.04450	-.01000	.04090	.00805	-.02838	.02290
3.502	-4.270	.04100	-.00930	.03470	.00750	-.02185	.01450
3.502	.090	.03700	-.01120	.02580	.00677	-.00982	-.00130
3.502	4.510	.03600	-.01420	.02170	.00659	-.00217	-.01400
3.502	6.715	.03800	-.01520	.01910	.00695	.00031	-.01715
3.502	8.940	.04400	-.02310	.01670	.00805	-.00216	-.01265
GRADIENT		-.00057	-.00056	-.00148	-.00010	.00224	-.00702

DATE 08 OCT 73   TABULATED SOURCE FORCE DATA-IA9C

AMES 27-T?? IA9 O2A + S3 + T9 SRM BOOSTER

(2BM17)   (15 SEP 73)

REFERENCE DATA

SREF =	2.4210 SQ.FT.	XREF =	29.5500 IN.
LREF =	39.8490 IN.	YREF =	.0000 IN.
BREF =	39.8490 IN.	ZREF =	.0000 IN.
SCALE =	.0100 SCALE		

PARAMETRIC DATA

ALPHA =	-8.000	ORBINC =	.000
RUDDER =	-10.000	ELEVON =	.000
RUDFLR =	.000		

RUN NO. 274/ 0   RNVL = 1.50   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
2.499	-8.350	-.13000	.07190	.02390	-.02408	-.01716	.01120
2.499	-6.240	-.11900	.06220	.02310	-.02207	-.00878	-.00140
2.499	-4.150	-.10730	.05300	.01980	-.01977	.00368	-.01980
2.499	.000	-.07890	.02720	.01550	-.01355	.02566	-.05440
2.499	4.340	-.04300	.00620	.01450	-.00807	.02655	-.05880
2.499	6.490	-.03900	-.02030	.01320	-.00624	.02299	-.05570
2.499	8.640	-.02600	-.03540	.01350	-.00496	.01353	-.04450
2.499	GRADIENT	.00754	-.00551	-.00062	.00138	.00269	-.03438

RUN NO. 280/ 0   RNVL = 2.00   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
2.999	-8.520	-.12400	.07090	.02710	-.02288	-.01636	.01280
2.999	-4.210	-.10200	.05390	.01930	-.01886	-.00193	-.01170
2.999	.070	-.07700	.03270	.01420	-.01429	.01690	-.04670
2.999	4.420	-.04900	.01160	.01200	-.00916	.02130	-.04830
2.999	8.800	-.03700	.00320	.01030	-.00687	.01272	-.03850
2.999	GRADIENT	.00614	-.00490	-.00084	.00114	.00269	-.03423

RUN NO. 269/ 0   RNVL = 1.99   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
3.502	-8.660	-.11400	.06800	.03080	-.02286	-.02133	.01700
3.502	-6.470	-.10700	.05910	.02720	-.01866	-.01478	.00760
3.502	-4.290	-.09100	.05130	.02310	-.01665	-.00718	-.00220
3.502	.070	-.05870	.03090	.01570	-.01226	.01079	-.02750
3.502	4.410	-.04100	.01120	.01230	-.00740	.01535	-.03550
3.502	6.720	-.03300	.00520	.01130	-.00594	.01223	-.03250
3.502	8.940	-.02800	.00170	.00950	-.00512	.00726	-.02650
3.502	GRADIENT	.00570	-.00453	-.00089	.00105	.00256	-.03380

DATE 28 OCT 73   TABULATED SOURCE FORCE DATA-1A9C

AMES 87-70" 1A9 QRA + S3 + T9 SRM BOOSTER

REFERENCE DATA   PARAMETRIC DATA

SREF =	2.4210 SQ.FT.	XMRP =	24.5500 IN.
LREF =	39.0400 IN.	YMRP =	.0000 IN.
BREF =	39.0400 IN.	ZMRP =	.0000 IN.
SCALE =	.0300 SCALE		

ALPHA =	-4.000	ORBINC = .000
RUDDER =	-10.000	ELEVON = .000
RUDFLR =	.000	

RUN NO. 273/ 0   RN/L = 1.50   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
2.498	-8.390	-.03600	.03070	.02980	-.01593	-.02855	.02340
2.498	-6.275	-.07590	.04200	.02520	-.01392	-.01963	.01675
2.498	-4.150	-.06200	.03190	.02380	-.01177	-.01355	.00745
2.498	.090	-.02720	.00670	.02090	-.00569	-.02561	-.00590
2.498	.090	-.01930	-.00770	.01780	-.00185	-.00395	-.01220
2.498	4.340	-.02090	-.01460	.01930	-.00020	-.00293	-.01394
2.498	6.475	.00770	-.02090	.01770	.00198	-.01484	-.01290
2.498	8.610	.00770	-.01466	-.00071	.00116	.00124	-.00227
	GRADIENT	.00636					

RUN NO. 281/ 0   RN/L = 2.00   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
2.999	-8.520	-.03590	.05460	.03090	-.01575	-.03135	.03400
2.999	-4.215	-.06420	.05600	.02410	-.01191	-.01861	.01490
2.999	.095	-.03590	.03130	.01690	-.00650	-.02459	-.00560
2.999	4.430	-.01590	-.01490	.01490	-.00284	-.00903	-.01490
2.999	8.770	-.02770	-.01170	.01380	-.00138	-.00082	-.01590
2.999		.02567	-.01473	-.00106	.00105	.00210	-.00344
	GRADIENT						

RUN NO. 269/ 0   RN/L = 1.99   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
3.512	-8.680	-.07220	.05130	.03520	-.01327	-.03624	.03490
3.512	-6.450	-.06420	.04360	.03050	-.01181	-.02958	.03170
3.512	-4.300	-.05400	.03490	.02440	-.00998	-.02226	.02570
3.512	.090	-.02990	.01290	.01890	-.00531	-.00165	-.02140
3.512	4.450	-.00900	-.00510	.01250	-.00165	.02291	-.01175
3.512	6.690	-.00420	-.00840	.01130	-.00073	.00053	-.01190
3.512	8.990	-.00590	-.01020	.01280	-.00035	-.00224	-.01900
3.512		.00512	-.00426	-.00136	.00095	.00253	-.02369
	GRADIENT						

DATE 28 OCT 73   TABULATED SOURCE FORCE DATA-IA9C

CSDM193 (15 SEP 73)

AMES 87-737 IA9 02A + S3 + T9-5RM BOOSTER

PARAMETRIC DATA

REFERENCE DATA

SREF =	2.4210 SQ.FT.	XMRP =	28.5350 IN.
LREF =	39.8490 IN.	YMRP =	.0000 IN.
BREF =	39.8490 IN.	ZMRP =	.0000 IN.
SCALE =	.0350 SCALE		

ALPHA =	.000	ORBINC = .900
RUDDER =	-10.000	ELEVON = .000
RUDFLR =	.000	

RUN NO. 276/ 0   RNVL = 1.99   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
2.499	-8.353	-.03500	.02910	.03700	-.00723	-.04897	.03340
2.499	-6.250	-.03300	.02860	.03610	-.00624	-.04460	.04670
2.499	-4.115	-.02300	.01350	.03150	-.00386	-.03936	.03900
2.499	.130	-.00500	-.00120	.02740	-.00093	-.03151	.02890
2.499	4.360	.01100	-.01240	.02180	.00163	-.02349	.01640
2.499	6.455	.01400	-.01570	.02130	.00236	-.02540	.01120
2.499	8.625	.01800	-.01930	.02370	.00309	-.02254	.01570
GRADIENT		.00354	-.00303	-.00115	.00063	.00187	-.00276

RUN NO. 282/ 0   RNVL = 1.99   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
2.999	-8.485	-.04400	.03580	.03980	-.00825	-.04575	.03550
2.999	-4.175	-.03000	.02190	.03250	-.00569	-.05021	.04170
2.999	.140	-.01300	.00510	.02600	-.00250	-.02926	.02990
2.999	4.450	.00100	-.00790	.02020	.00008	-.02590	.01300
2.999	8.770	.02300	-.01360	.01720	.00155	-.01545	.02310
GRADIENT		.00360	-.00366	-.00140	.00067	.00229	-.00324

RUN NO. 273/ 0   RNVL = 1.99   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
3.502	-8.650	-.03200	.03270	.03960	-.00605	-.05094	.05860
3.502	-6.480	-.02800	.02780	.03750	-.00532	-.04576	.05190
3.502	-4.270	-.02600	.02260	.03200	-.00486	-.03925	.04260
3.502	.120	-.00500	.00440	.02320	-.00120	-.02644	.02350
3.502	4.500	.00900	-.00920	.01810	.00155	-.01801	.01300
3.502	6.700	.01000	-.01240	.01360	.00173	-.01229	.00800
3.502	8.920	.01300	-.01490	.01430	.00228	-.01152	.00320
GRADIENT		.00399	-.00363	-.00159	.00073	.00242	-.00315

DATE 26 OCT 73   TABULATED SOURCE FORCE DATA-IAS-

AMES 87-77 IA9 SD4 • S3 • "9 SRM BOOSTER

PARAMETRIC DATA

REFERENCE DATA

SREF =	2.4213 SQ.FT.	XREF =	29.59·· IN.
LREF =	39.8499 IN.	YREF =	.···· IN.
BREF =	39.8499 IN.	ZREF =	.···· IN.
SCALE =	.0··· SCALE		

ALPHA = 4.000   ORBINC = .500
RUDDB = -15.000 ELEVON = .000
RUDFLR = .000

RUN NO. 277/ 0   ENVL = 1.99   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
2.499	-8.310	.01500	.00950	.04956	.0007	-.01487	.01590
2.499	-6.250	.00800	.00900	.04040	.00126	-.01539	.01535
2.499	-4.090	.01200	.00680	.03545	.00200	-.01440	.01240
2.499	.140	.01700	-.00670	.03155	.0009?	-.0111?	.1271
2.499	4.380	.02270	-.01190	.02640	.00382	-.02220	.01115
2.499	5.570	.02400	-.01370	.02510	.00415	-.01570	.01500
2.499	8.600	.02700	-.01600	.02460	.00474	-.01734	.1220
	GRADIENT	.00118	-.00151	-.00155	.00?2	.0011	-.01150

RUN NO. 283/ 0   ENVL = 1.99   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
2.999	-8.470	-.00500	.01510	.04390	-.00065	-.00280	.01750
2.999	-4.160	.00200	.00910	.03710	.00027	-.00270	.02490
2.999	.190	.00500	.00220	.02090	.00031	-.03125	.02655
2.999	4.480	.01900	-.00570	.02160	.00120	-.00919	.00920
2.999	8.790	.02100	-.01310	.00990	.00356	-.01174	-.00190
	GRADIENT	.05120	-.00183	-.00177	.00020	.00274	-.03390

RUN NO. 271/ 0   ENVL = 1.99   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
3.592	-8.640	.00500	.01290	.04490	.00071	-.00380	.01555
3.592	-6.450	.00700	.01010	.03710	.00108	-.00469	.01500
3.592	-4.250	.00500	.00740	.03120	.00145	-.0127	.01390
3.592	.120	.01200	.0044?	.02710	.00210	-.00626	.02210
3.592	4.520	.02000	-.00140	.01770	.00355	-.00464	.01520
3.592	6.710	.02200	-.00690	.01650	.00392	-.00695	.1211
3.592	8.920	.0011?	-.01720	.01740	.00552	-.01088	.11?9
	GRADIENT	.00123	-.00160	-.00177	.00024	.00269	-.02372

DATE 26 OCT 73   TABULATED SOURCE FORCE DATA-IA9C

(8BN421)   (15 SEP 73)

AMES 87-T07 IA9 O2A + S3 + T9 SRM BOOSTER

PARAMETRIC DATA

REFERENCE DATA

SREF = 2.4210 SQ.FT.   XMRF = 28.5300 IN.
LREF = 39.8490 IN.   YMRF = .0000 IN.
BREF = 39.8490 IN.   ZMRF = .0000 IN.
SCALE = .0300 SCALE

ALPHA = 6.000   ORBINC = .500
RUDDER = -10.000   ELEVON = .000
RUDFLR = .000

RUN NO. 278/ 0   RNVL = 1.50   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
2.499	-8.300	.02700	-.00060	.04470	.00474	-.05128	.05075
2.499	-6.190	.03000	-.00370	.04220	.00529	-.04552	.04210
2.499	-4.580	.02800	-.00590	.03780	.00492	-.03842	.03220
2.499	.140	.02700	-.00800	.03440	.00474	-.02669	.01440
2.499	4.380	.02200	-.00820	.02690	.00346	-.01452	-.00350
2.499	5.900	.03000	-.01300	.02700	.00529	-.01184	-.00800
2.499	8.640	.03300	-.01670	.02490	.00594	-.01528	-.01050
GRADIENT		-.00095	-.00034	-.00129	-.00017	.00282	-.00422

RUN NO. 284/ 0   RNVL = 1.99   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
2.999	-8.460	.01600	.00590	.04570	.00283	-.04726	.04860
2.999	-4.160	.01800	.00200	.03610	.00319	-.03470	.03120
2.999	.130	.01700	-.00170	.03050	.00301	-.02268	.01350
2.999	4.460	.01800	-.00520	.02420	.00329	-.01263	-.00200
2.999	8.790	.02700	-.01440	.02070	.00494	-.00619	-.01050
GRADIENT		.00000	-.00084	-.00138	.00001	.00256	-.00385

RUN NO. 272/ 0   RNVL = 1.98   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
3.502	-8.630	.02700	.00040	.04330	.00474	-.04494	.04610
3.502	-6.440	.02700	-.00070	.04060	.00474	-.03913	.03870
3.502	-4.260	.02500	-.00010	.03560	.00437	-.03131	.02770
3.502	.110	.02300	-.00410	.02640	.00411	-.01653	.00760
3.502	4.520	.02400	-.00810	.01820	.00429	-.00763	-.00550
3.502	6.710	.02970	-.01170	.01740	.00521	-.02388	-.00970
3.502	8.930	.03500	-.01950	.01680	.00630	-.03537	-.00870
GRADIENT		-.00011	-.00291	-.00198	-.00201	.00270	-.00378

DATE 28 OCT 73   TABULATED SOURCE FORCE DATA-IA9C

AMES 87-707 IA9 O2A + S3 + T9 SRM BOOSTER

(BBN122)   (13 SEP 73)

REFERENCE DATA

					PARAMETRIC DATA	
SREF	=	2.4215 SQ.FT.	XMRP	=	28.5556 IN.	
LREF	=	39.8490 IN.	YMRP	=	.0005 IN.	
BREF	=	39.8490 IN.	ZMRP	=	.0020 IN.	
SCALE	=	.0300 SCALE				

ALPHA =	8.000	ORBINC =	.670
RUDDER =	-10.000	ELEVON =	.000
RUDFLR =	.000		

RUN NO. 279/ 0   RNVL = 1.50   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
2.499	-8.280	.04590	-.00960	.04590	.00803	-.04139	.03480
2.499	-5.190	.04620	-.01140	.04290	.00822	-.03367	.02420
2.499	-4.080	.04420	-.01180	.03980	.00785	-.02558	.01270
2.499	.120	.03800	-.01170	.03500	.00675	-.01290	-.00740
2.499	4.390	.03590	-.01150	.02970	.00620	-.00543	-.01970
2.499	6.520	.04190	-.01590	.02760	.00730	-.00285	-.02380
2.499	8.650	.02570	-.01110	.02840	.00491	-.00190	-.02560
2.499	GRADIENT	-.00106	.00004	-.00119	-.00019	.00238	-.00382

RUN NO. 285/ 0   RNVL = 1.99   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
2.999	-8.440	.04200	-.00810	.04690	.00758	-.03888	.03580
2.999	-4.170	.03720	-.00730	.03840	.00667	-.02362	.01490
2.999	.120	.03350	-.00900	.03320	.00604	-.01122	-.00360
2.999	4.480	.02900	-.00920	.02460	.00531	-.00390	-.01690
2.999	8.800	.03900	-.01940	.02110	.00713	.00054	-.02170
2.999	GRADIENT	-.00093	-.00022	-.00160	-.00016	.00233	-.00368

RUN NO. 273/ 0   RNVL = 1.99   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CAF	CBL	CYN	CY
3.502	-8.620	.04990	-.01180	.04800	.00876	-.03498	.03040
3.502	-6.440	.04770	-.01160	.03710	.00840	-.02669	.02380
3.502	-4.260	.04300	-.00991	.03460	.00767	-.02125	.01310
3.502	.090	.03800	-.01160	.02690	.00675	-.00911	-.00410
3.502	4.520	.03700	-.01410	.01800	.00657	-.00029	-.01680
3.502	6.730	.04100	-.01690	.01950	.00740	.00113	-.01910
3.502	8.950	.04770	-.02440	.01660	.00850	-.00124	-.01480
3.502	GRADIENT	-.00064	-.00048	-.00189	-.00012	.00238	-.00340

DATE 28 OCT 73   TABULATED SOURCE FORCE DATA-1A9C

                               AMES 87-707 IA9 ORA + S3 + T9 EXTERNAL TANK

REFERENCE DATA   (RBN201) (30 MAY 73)

                                                                 PARAMETRIC DATA
SREF =   2.4210 SQ.FT.   XMRF =   28.5900 IN.   BETA   =   .000   JRPINC =   .500
LREF = 39.8490 IN.   YMRF =   .0000 IN.   RUDDER =   .000   ELEVON =   .000
BREF = 39.8490 IN.   ZMRF =   .0000 IN.   RUDFLR =   .000
SCALE =   .0300 SCALE

          RUN NO. 240/ 0   RN/L =   1.51   GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV
2.498	-8.100	-.47920	.19420	.32870	.22610	-.00030	-.00090	-.00180	.10260
2.498	-6.070	-.33630	.12720	.32510	.22900	-.00030	-.00040	-.00190	.10220
2.498	-4.030	-.23900	.09280	.32140	.22170	-.00040	-.00110	-.00120	.10360
2.498	-2.000	-.13300	.05210	.32230	.22250	-.00050	-.00130	-.00140	.09980
2.498	.000	-.04100	.02075	.32525	.22640	-.00040	-.00200	-.00100	.09880
2.498	.000	.05400	-.01560	.32660	.22890	-.00050	-.00270	-.00060	.09770
2.498	1.930	.16100	-.05690	.32700	.23210	-.00050	-.00230	-.00090	.09490
2.498	3.930	.24900	-.08490	.32570	.23370	-.00040	-.00300	-.00170	.09200
2.498	5.990	.37900	-.14040	.32240	.23340	-.00010	-.00370	-.00250	.08990
2.498	8.010	.04997	-.01855	.00078	.00147	-.00001	-.00016	.00031	-.00075
	GRADIENT								

          RUN NO. 230/ 0   RN/L =   1.99   GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV
2.999	-8.070	-.41100	.16030	.29580	.21700	-.00040	-.00020	-.00130	.07820
2.999	-6.100	-.32600	.12890	.29010	.20860	-.00050	-.00050	-.00210	.08160
2.999	-4.070	-.20990	.07760	.28590	.20760	-.00090	-.00020	-.00190	.07890
2.999	-2.000	-.13000	.05350	.28570	.20750	-.00050	-.00020	-.00130	.07820
2.999	-.010	-.05100	.03060	.28680	.20910	-.00090	-.00080	-.00040	.07770
2.999	1.930	.02600	.00640	.28780	.21300	-.00060	-.00100	-.00070	.07480
2.999	3.960	.11400	-.02410	.28730	.21120	-.00050	-.00170	.00020	.07625
2.999	5.990	.22200	-.06090	.28620	.21180	-.00050	-.00150	-.00020	.07340
2.999	8.020	.30300	-.09450	.28150	.21060	-.00060	-.00210	-.00100	.07190
2.999		.04012	-.01253	.00024	.00063	-.00000	-.00023	.00022	-.00038
	GRADIENT								

          RUN NO. 220/ 0   RN/L =   1.98   GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV
3.502	-8.080	-.39520	.15570	.27410	.22590	-.00100	.00430	-.00980	.04460
3.502	-6.080	-.31400	.12410	.26740	.20670	-.00110	.00440	-.01040	.06070
3.502	-4.070	-.22600	.09150	.26420	.20240	-.00110	.00440	-.01120	.06160
3.502	-2.020	-.15800	.07220	.26140	.20410	-.00110	.00430	-.01110	.05720
3.502	-.030	-.06600	.03530	.26130	.20280	-.00120	.00380	-.01020	.05750
3.502	1.950	-.01200	.02760	.25970	.19930	-.00130	.00300	-.00990	.06240
3.502	3.960	.05500	.00260	.25710	.19760	-.00130	.00280	-.01030	.05990
3.502	5.970	.16900	-.02830	.25060	.19300	-.00140	.00280	-.00850	.05990
3.502	8.010	.23700	-.05900	.24950	.19350	-.00140	.00230	-.00820	.05640
3.502		.03634	-.01191	-.00077	-.00072	-.00203	-.00022	.00040	-.00076
	GRADIENT								

DATE 30 OCT 73   TABULATED SOURCE FORCE DATA-IA9C

                                                                    (RBN202)   (30 MAY 73)

                    AMES 87-707 IA9 O2A + S3 + T9 EXTERNAL TANK

REFERENCE DATA   PARAMETRIC DATA

SREF = 2.4210 SQ.FT.   XMRP =   28.5300 IN.   ALPHA = -8.000   ORBINC = .000
LREF = 39.0490 IN.   YMRP =   .0000 IN.   RUDDER =   .000   ELEVON = .000
BREF = 39.0-90 IN.   ZMRP =   .0000 IN.   RUDFLR =   .000
SCALE = .0300 SCALE

RUN NO. 241/ 0   RNVL =   1.50   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV
2.498	-8.490	-.48290	.19280	.34310	.23600	.04300	-.16700	.38580	.19710
2.498	-6.280	-.46800	.18580	.34110	.23330	.03930	-.12770	.28810	.10590
2.498	-4.170	-.46710	.18590	.33690	.23050	.01780	-.08190	.18620	.10650
2.498	-2.060	-.46590	.18640	.33540	.22990	.00815	-.04040	.09160	.10560
2.498	2.180	-.47090	.18970	.33390	.23460	-.00890	.03740	-.09120	.09930
2.498	2.180	-.46400	.18490	.33680	.23460	-.01910	.08090	-.18920	.10220
2.498	4.320	-.45700	.17990	.33880	.23320	-.03160	.12940	-.29250	.10560
2.498	6.460	-.47600	.19140	.34340	.23900	-.04430	.17050	-.39290	.10440
2.498	8.590	-.47600	.19140	.34340	.23900	-.04430	.17050	-.39290	.10440
2.498	GRADIENT	.00005	.00026	-.00208	.00061	-.01428	.01897	-.04395	-.00070

RUN NO. 231/ 0   RNVL =   2.00   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV
2.999	-8.560	-.43900	.16780	.31110	.22920	.04220	-.16540	.37770	.08190
2.999	-6.400	-.42800	.16730	.30620	.22650	.03090	-.12800	.28650	.07990
2.999	-4.250	-.42470	.16700	.30210	.22070	.01890	-.08520	.18040	.08130
2.999	-2.120	-.43250	.17320	.30170	.22130	.05870	-.04280	.09410	.07940
2.999	2.230	-.42590	.16780	.30130	.22350	-.01010	.04310	-.09610	.07800
2.999	2.230	-.41690	.16380	.30180	.22310	-.02010	.08490	-.19110	.07870
2.999	4.490	-.42000	.16380	.30520	.22760	-.03170	.13200	-.29990	.07860
2.999	6.580	-.43400	.17140	.31000	.23170	-.04340	.17070	-.38570	.07850
2.999	8.750	-.43400	.17140	.31000	.23170	-.04340	.17070	-.38570	.07850
2.999	GRADIENT	.00097	-.00055	.00000	.00000	.00448	.01960	-.04407	-.00030

RUN NO. 221/ 0   RNVL =   1.99   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV
3.502	-8.710	-.41000	.16160	.29270	.23030	.03960	-.15720	.36150	.06240
3.502	-6.520	-.40590	.15970	.28650	.22440	.02800	-.11950	.26940	.06220
3.502	-4.330	-.41250	.16520	.28180	.21800	.01710	-.08090	.17700	.06280
3.502	-2.140	-.41590	.16700	.27740	.21600	.00730	-.04060	.08550	.06130
3.502	2.260	-.40200	.16300	.27660	.21620	-.00920	.04650	-.10220	.06040
3.502	2.260	-.40100	.15800	.28160	.21380	.01690	.08760	-.19690	.06180
3.502	4.450	-.41600	.16750	.28520	.22400	-.02980	.12710	-.28990	.06110
3.502	6.650	-.42400	.17185	.28950	.22680	-.04100	.16530	-.38110	.06280
3.502	8.910	-.42400	.17185	.28950	.22680	-.04100	.16530	-.38110	.06280
3.502	GRADIENT	.00132	-.00084	-.00005	.00000	-.00452	.01926	-.04248	-.00003

DATE 08 OCT 73   TABULATED SOURCE FORCE DATA-IA9C

                      (RDM293) (30 MAY 73)

AMES 87-737 IA9 O2A + S3 + T9 EXTERNAL TANK

REFERENCE DATA   PARAMETRIC DATA

SREF = 2.4210 SQ.FT.   XMRF = 28.5395 IN.   ALPHA = -6.000   ORBINK =   .500
LREF = 39.8490 IN.   YMRF =   .0000 IN.   RUDDER =   .000   ELEVON =   .000
BREF = 39.8490 IN.   ZMRF =   .0000 IN.   RUDFLR =   .000
SCALE = .0300 SCALE

RUN NO. 242/ 0   RVL = 1.50   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV
2.498	-8.420	-.36200	.14350	.34160	.23510	.04140	-.15790	.36660	.10650
2.498	-6.290	-.35700	.14210	.33990	.23320	.02890	-.11460	.26610	.10660
2.498	-4.180	-.36000	.14460	.33550	.22880	.01670	-.07070	.16620	.10670
2.498	-2.070	-.34890	.13640	.33290	.22910	.00750	-.03220	.07640	.10580
2.498	2.180	-.35200	.13970	.33160	.23090	-.00880	.03460	-.08990	.10970
2.498	4.310	-.35900	.14380	.33440	.23410	-.01860	.07380	-.18040	.10390
2.498	6.440	-.35400	.14060	.33660	.23500	-.03070	.11920	-.27840	.10360
2.498	8.570	-.35400	.13840	.33920	.23720	-.04330	.16330	-.37900	.10250
2.498	GRADIENT	-.00010	.00028	-.00016	.00058	-.00408	.01676	-.04047	-.00075

RUN NO. 232/ 0   RVL = 2.00   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV
2.999	-8.570	-.31800	.12170	.30570	.22410	.03960	-.15600	.35930	.08160
2.999	-6.420	-.32400	.12790	.29990	.22000	.02800	-.11820	.26710	.07990
2.999	-4.280	-.32300	.12510	.29690	.21530	.01790	-.07680	.17380	.08150
2.999	-2.100	-.33200	.13260	.29550	.21600	.00760	-.03790	.08290	.07950
2.999	2.220	-.33900	.13530	.29470	.21450	-.00940	.04200	-.09640	.08020
2.999	4.390	-.33100	.13240	.29610	.21950	-.01910	.08070	-.18590	.07660
2.999	6.560	-.32900	.12800	.30010	.22220	-.03010	.12260	-.27920	.07790
2.999	8.730	-.32400	.12650	.30590	.22700	-.04160	.16240	-.37090	.07860
2.999	GRADIENT	-.00116	.00083	-.00011	.00732	-.00415	.01824	-.04157	-.07042

RUN NO. 222/ 0   RVL = 1.99   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV
3.502	-8.730	-.33420	.13610	.28580	.22270	.03740	-.15100	.34600	.06310
3.502	-6.530	-.34000	.13970	.28010	.21670	.02610	-.11410	.25710	.06340
3.502	-4.340	-.33700	.13810	.27470	.20980	.01580	-.07500	.16530	.06490
3.502	-2.140	-.32100	.12870	.27020	.20680	.00670	-.03590	.07610	.06330
3.502	2.260	-.32500	.13170	.27070	.20890	-.00880	.04710	-.10400	.06180
3.502	4.470	-.32500	.13190	.27370	.21390	-.01800	.08640	-.19450	.06080
3.502	6.680	-.32700	.13320	.27880	.21710	-.02820	.12410	-.28350	.06170
3.502	8.890	-.32700	.13420	.28340	.22280	-.03910	.15920	-.36950	.06160
3.502	GRADIENT	.00091	-.00043	-.00007	.00039	-.00377	.01843	-.04086	-.00044

DATE 30 OCT 73   TABULATED SOURCE FORCE DATA-IA9C

AMES 87-T07 IA9 O2A + S3 + T9 EXTERNAL TANK   (RBN254) (30 MAY 73)

REFERENCE DATA

SREF =	2.4210 SQ.FT.	XMRP =	28.5300 IN.
LREF =	39.8400 IN.	YMRP =	.0000 IN.
BREF =	39.8400 IN.	ZMRP =	.0000 IN.
SCALE =	.0300 SCALE		

PARAMETRIC DATA

ALPHA =	-4.000	ORBINC = .900
RUDDER =	.000	ELEVON = .000
RUDFLR =	.000	

RUN NO. 243/ 0   RNVL = 1.50   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV
2.498	-8.430	-.23100	.09890	.33870	.23110	.04130	-.15000	.35240	.10750
2.498	-6.310	-.24330	.09540	.33890	.23190	.02930	-.10970	.25830	.10650
2.498	-4.190	-.24400	.09640	.33390	.22820	.01760	-.05890	.16360	.10570
2.498	-2.070	-.24090	.09450	.32980	.22800	.00810	-.03380	.07950	.10160
2.498	2.180	-.23700	.09220	.32960	.22860	-.00960	.03010	-.08210	.10200
2.498	4.300	-.23600	.09310	.33250	.23050	-.01950	.06700	-.16920	.10200
2.498	4.300	-.23400	.09590	.33710	.23320	-.03130	.11130	-.26540	.10390
2.498	6.430	-.24200	.09510	.33660	.23960	-.04350	.15370	-.36210	.09700
2.498	8.550								
GRADIENT		.00089	-.00040	-.00214	.00024	-.00433	.01576	-.03896	-.00039

RUN NO. 233/ 0   RNVL = 2.00   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV
2.999	-8.580	-.23700	.09530	.30230	.22360	.03890	-.14890	.34550	.07870
2.999	-6.420	-.23900	.09460	.29790	.21670	.02790	-.11030	.25620	.08120
2.999	-4.260	-.23300	.09350	.29350	.21260	.01680	-.07170	.16730	.08100
2.999	-2.110	-.22800	.08600	.29140	.21120	.00750	-.03590	.08190	.08030
2.999	2.210	-.22800	.09100	.29100	.21360	-.00900	.03620	-.08830	.07740
2.995	4.380	-.22900	.09250	.29280	.21380	-.01890	.07390	-.17520	.07890
2.999	6.550	-.23400	.09470	.29790	.21790	-.02910	.11460	-.26510	.07950
2.999	8.710	-.23300	.09250	.30220	.22310	-.04050	.15520	-.35760	.07925
GRADIENT		.00009	.00214	-.00008	.00022	-.00403	.01680	-.03959	-.00033

RUN NO. 223/ 0   RNVL = 1.99   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV
3.502	-8.740	-.24900	.10510	.28070	.21770	.03600	-.14560	.33600	.06290
3.502	-6.540	-.26800	.11820	.27600	.21160	.02510	-.11030	.24950	.06440
3.502	-4.340	-.23500	.09650	.27040	.20340	.01310	-.07280	.16220	.06590
3.502	-2.150	-.24000	.09760	.26670	.20540	.00640	-.03460	.07550	.06130
3.502	2.280	-.24990	.10410	.26570	.20470	-.00820	.04360	-.10020	.06090
3.502	4.460	-.23500	.09510	.26950	.20760	-.01700	.08150	-.18730	.06190
3.502	6.660	-.25100	.10780	.27440	.21000	-.02710	.11900	-.27430	.06450
3.502	8.870	-.24100	.10010	.27860	.21640	-.03770	.15510	-.36030	.06210
GRADIENT		-.00023	.00017	-.00013	.00017	-.00358	.01758	-.03974	-.00030

DATE 08 OCT 73   TABULATED SOURCE FORCE DA: 1A9C

(RUN(DS)   (30 MAY 73)

AMES 87-707 IA9 C2A + S3 + T9 EXTERNAL TANK

REFERENCE DATA

SREF = 2.6210 SQ.FT.   XMRP = 28.5999 IN.
LREF = 39.0490 IN.   YMRP = .0000 IN.
BREF = 39.0490 IN.   ZMRP = .0000 IN.
SCALE = .0300 SCALE

PARAMETRIC DATA

ALPHA = -2.000   ORBINC = .900
RUDDER = .000   ELEVON = .000
RUDFLR = .000

RUN NO. 244/ 0   RN/L = 1.90   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV
2.498	-8.430	-.13500	.04940	.33570	.22920	.04200	-.14990	.34620	.10650
2.498	-6.310	-.14600	.06100	.33690	.23020	.03020	-.10830	.24950	.10670
2.498	-4.190	-.13900	.05630	.33320	.22780	.01850	-.06700	.15560	.10540
2.498	-2.070	-.12700	.04710	.32960	.22810	.00840	-.03290	.07230	.10190
2.498	2.180	-.14100	.05640	.32980	.23220	-.01040	.03290	-.08440	.09760
2.498	4.300	-.14000	.05750	.33240	.23180	-.02090	.06880	-.16840	.10060
2.498	6.420	-.13400	.05900	.33580	.23550	-.03280	.11090	-.26100	.10030
2.498	8.540	-.13100	.05920	.33420	.24170	-.04470	.15160	-.35490	.09360
GRADIENT		-.00075	.00055	-.00007	.00057	-.00460	.01586	-.03750	-.00064

RUN NO. 234/ 0   RN/L = 1.99   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV
2.999	-8.590	-.13500	.05463	.29730	.21870	.03990	-.15120	.34910	.07870
2.999	-6.440	-.14500	.06370	.29490	.21380	.02870	-.11310	.26050	.08100
2.999	-4.270	-.13200	.05510	.29380	.21230	.01810	-.07490	.17290	.07850
2.999	-2.110	-.12500	.05090	.28820	.21090	.00850	-.03810	.08840	.07810
2.999	2.220	-.13600	.05870	.28780	.21130	-.00960	.03560	-.08460	.07650
2.999	4.370	-.13500	.05640	.29030	.21580	-.01990	.07070	-.16990	.07490
2.999	6.530	-.14100	.06110	.29440	.21850	-.03010	.11110	-.25880	.07620
2.999	8.700	-.13400	.05500	.29610	.22230	-.04100	.15020	-.34730	.07595
GRADIENT		-.00060	.00048	-.00037	.00038	-.00433	.01679	-.03973	-.00144

RUN NO. 224/ 0   RN/L = 1.99   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV
3.502	-8.750	-.16800	.07550	.27670	.21620	.03550	-.13990	.32120	.06050
3.502	-6.540	-.16900	.07740	.27400	.21340	.02480	-.10440	.23510	.06060
3.502	-4.350	-.16400	.07440	.26880	.21710	.01490	-.06690	.14880	.06170
3.502	-2.140	-.16800	.07620	.26480	.22310	.00690	-.03030	.06670	.06160
3.502	2.260	-.16000	.07640	.26330	.20240	-.00890	.04310	-.10150	.06090
3.502	4.460	-.17500	.08060	.26740	.21650	-.01730	.07780	-.18170	.06090
3.502	6.660	-.17200	.08170	.27180	.25990	-.02720	.11430	-.26470	.06190
3.502	8.860	-.16500	.07560	.27280	.21300	-.03730	.14950	-.34690	.06080
GRADIENT		-.00073	.00048	-.00020	-.00019	-.00362	.01648	-.03762	-.00010

DATE 08 OCT 73   TABULATED SOURCE FORCE DATA-1A9C

                                                                    (RBN296)   (15 MAY 73)

                        AMES B7-T07 1A9 O2A + S3 + T9 EXTERNAL TANK

REFERENCE DATA   PARAMETRIC DATA

SREF = 2.4210 SQ.FT.   XMRP = 28.5990 IN.   ALPHA = .000   ORBINC = .500
LREF = 39.8490 IN.   YMRP = .0000 IN.   RUDDER = .000   ELEVON = .000
BREF = 39.8490 IN.   ZMRP = .0000 IN.   RUDFLR = .000
SCALE = .0350 SCALE

RUN NO. 245/ 0   RNVL = 1.50   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV
2.498	-8.430	-.03900	.01360	.33320	.22870	.04260	-.15110	.34220	.15490
2.498	-6.310	-.03600	.01540	.35570	.23310	.05540	-.11190	.23160	.12260
2.498	-4.190	-.04000	.01870	.33210	.22690	.01910	-.07210	.16170	.10520
2.498	-2.070	-.03900	.01850	.32860	.22970	.00850	-.03510	.07790	.09890
2.498	2.170	-.03900	.01960	.32830	.23170	-.01110	.03280	-.08420	.09660
2.498	2.170	-.03900	.01560	.33040	.23270	-.02210	.07190	-.17010	.09770
2.498	4.290	-.03900	.01960	.33330	.23510	-.03360	.11320	-.26100	.09820
2.498	6.410	-.04200	.01960	.33330	.23980	-.04640	.15470	-.35570	.09210
2.498	8.540	-.03100	.01160	.33190	.23980	-.03481	.01674	-.03895	-.00363
GRADIENT		.00047	-.00024	-.00017	.00045				

RUN NO. 235/ 0   RNVL = 2.00   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV
2.999	-8.590	-.06100	.03180	.29550	.21780	.03930	-.14340	.32890	.07770
2.999	-6.430	-.07200	.04090	.29330	.21490	.02810	-.10510	.24110	.07840
2.999	-4.270	-.06100	.03210	.29010	.21310	.01700	-.06610	.15350	.07700
2.999	-2.110	-.04900	.02480	.28950	.21320	.00760	-.02990	.07030	.07610
2.999	2.210	-.05900	.03090	.26940	.21530	-.01000	.03550	-.08890	.07410
2.999	2.210	-.06100	.03190	.28990	.21390	-.01970	.07080	-.16900	.07600
2.999	4.370	-.05900	.03040	.29350	.21790	-.03080	.10860	-.25360	.07560
2.999	6.530	-.06800	.03480	.29490	.22140	-.04210	.14810	-.34120	.07360
2.999	8.690	-.00046	.00025	-.00002	.00017	-.00421	.01568	-.03721	-.00019
GRADIENT									

RUN NO. 225/ 0   RNVL = 1.99   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV
3.502	-8.750	-.08400	.04570	.27200	.21140	.03630	-.13810	.31450	.06080
3.502	-6.590	-.07890	.04420	.27070	.20940	.02550	-.10190	.22970	.06130
3.502	-4.340	-.09700	.05650	.26740	.20540	.01590	-.06510	.14540	.06200
3.502	-2.150	-.10400	.06090	.26570	.20460	.00690	-.02990	.06650	.06110
3.502	2.260	-.10500	.06130	.26520	.20340	-.00810	.03630	-.08890	.06180
3.502	2.260	-.08590	.05080	.26630	.20430	-.01690	.07140	-.16770	.06200
3.502	4.450	-.10500	.06140	.27120	.20700	-.02700	.10810	-.25550	.06320
3.502	6.650	-.09100	.05160	.27080	.21070	-.03740	.14360	-.33490	.06010
3.502	8.690	.00105	-.00056	-.00012	-.00015	-.00362	.01545	-.03552	.00003
GRADIENT									

DATE 26 OCT 73   TABULATED SOURCE FORCE DATA-IA9C

AMES 87-707 IA9 OZA + S3 + T9 EXTERNAL TANK   (R8B207) (30 MAY 73)

REFERENCE DATA   PARAMETRIC DATA

SREF =	2.4210 SQ.FT.	XMRP =	26.5500 IN.
LREF =	39.8490 IN.	YMRP =	.0000 IN.
BREF =	39.8490 IN.	ZMRP =	.0000 IN.
SCALE =	.0320 SCALE		

ALPHA = 2.000   ORBINC = .000
RUDDER =   .000   ELEVON = .000
RUDFLR =   .000

RUN NO. 246/ 0   RVAL = 1.50   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CBL	CYN	CY	CABLV
2.496	-8.430	.06600	-.02580	.23250	.04690	-.15650	.35980	.10340
2.496	-6.310	.05900	-.01870	.23200	.03050	-.11470	.25390	.10290
2.496	-4.190	.05600	-.01620	.2980	.02050	-.07290	.16170	.10130
2.496	-2.060	.06000	-.01910	.23250	.00920	-.03540	.07630	.09680
2.496	2.170	.06000	-.01950	.23440	-.01160	.03650	-.08730	.09460
2.496	4.290	.05900	-.01580	.23550	-.02310	.07490	-.17250	.09390
2.496	6.410	.06200	-.02120	.23720	-.03460	.11520	-.26030	.09520
2.496	8.540	.06600	-.02590	.24000	-.04750	.15620	-.35390	.09420
	GRADIENT	-.00009	.00002	.00065	-.00511	.01734	-.03927	-.00090

RUN NO. 236/ 0   RVAL = 2.00   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CBL	CYN	CY	CABLV
2.999	-8.590	.03900	-.00190	.21600	.04100	-.14450	.32550	.07680
2.999	-6.420	.03600	-.00160	.21370	.02940	-.10510	.23840	.07760
2.999	-4.270	.02700	.00370	.21120	.01820	-.06590	.15340	.07790
2.999	-2.110	.03200	.00160	.21170	.00890	-.03170	.07460	.07520
2.999	2.210	.03400	-.00040	.21340	-.00960	.02910	-.07490	.07450
2.999	4.370	.02100	.00780	.21520	-.01970	.06320	-.15310	.07900
2.999	6.530	.02700	.00430	.21850	-.03140	.10290	-.24030	.07520
2.999	8.690	.03300	-.00220	.22180	-.04310	.14490	-.32980	.07375
	GRADIENT	-.00037	.00029	.00045	-.00434	.01477	-.03526	-.00022

RUN NO. 226/ 0   RVAL = 1.98   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CBL	CYN	CY	CABLV
3.502	-8.730	-.00720	.01870	.20810	.03630	-.13140	.29720	.06070
3.502	-6.540	-.01800	.02740	.20570	.02590	-.09520	.21060	.05980
3.502	-4.340	-.02600	.03200	.20370	.01540	-.05680	.12810	.05840
3.502	-2.140	-.02400	.03110	.20250	.00510	-.02460	.05340	.05880
3.502	2.250	-.02400	.03190	.20170	-.00870	.03630	-.08640	.05040
3.502	4.460	-.01900	.02960	.20520	-.01810	.06800	-.16170	.05870
3.502	6.660	-.01800	.02930	.20440	-.02830	.10370	-.24350	.06100
3.502	8.850	-.02200	.01690	.20740	-.03880	.14190	-.32790	.05760
	GRADIENT	.00064	-.00018	.00010	-.00373	.01412	-.03272	-.00058

DATE 08 OC 73   TABULATED SOURCE FORCE DATA-IA9K

AMES 87-707 IA9 OEA + S3 + T9 EXTERNAL TANK   (REMCOR)   (31 MAY 73)

PARAMETRIC DATA

REFERENCE DATA

SREF =	2.4210 SQ.FT.	XMRP =	28.3300 IN.	
LREF =	39.8490 IN.	YMRP =	.0000 IN.	
BREF =	39.8490 IN.	ZMRP =	.0000 IN.	
SCALE =	.0300 SCALE			

ALPHA =   4.000   ORBINC =   .500
RUDDER =   .000   ELEVON =   .000
RUDFLR =   .000

RUN NO. 247/ 0   RNVL =   1.50   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV
2.498	-8.420	.15730	-.05720	.33580	.23310	.04950	-.15710	.34740	.10273
2.498	-6.930	.16900	-.06210	.33280	.23350	.03390	-.11720	.23630	.09923
2.498	-4.190	.15730	-.05360	.32950	.23200	.02160	-.07580	.16470	.09733
2.498	-2.0.3	.15600	-.05380	.32970	.23490	.00990	-.03900	.08180	.09480
2.498	2.170	.15230	-.05170	.32890	.23480	-.01230	.03920	-.04420	.09420
2.498	4.300	.15900	-.05380	.32950	.23820	-.02390	.07380	-.16820	.09110
2.498	3.420	.16700	-.06260	.33230	.23770	-.03580	.11410	-.25690	.09460
2.498	8.530	.17300	-.06720	.33300	.23920	-.04820	.15490	-.34990	.09560
2.498	GRADIENT	-.00038	.00013	-.00006	.00058	-.00053	.01766	-.03920	-.00063

RUN NO. 237/ 0   RNVL =   2.00   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV
2.999	-8.58C	.14300	-.04700	.29300	.21730	.04210	-.14350	.32210	.07370
2.999	-6.420	.12600	-.03150	.28940	.21390	.03090	-.10990	.23540	.07350
2.999	-4.260	.12700	-.03260	.28720	.21290	.01940	-.06580	.14940	.07475
2.999	-2.100	.11700	-.02660	.28740	.21340	.00900	-.03290	.07300	.07410
2.999	2.210	.11730	-.02690	.28860	.21500	-.01060	.03100	-.07740	.07370
2.999	4.375	.12470	-.03240	.28840	.21510	-.02110	.06300	-.15230	.07320
2.999	6.540	.11700	-.02860	.29180	.21740	-.03320	.10350	-.23990	.07440
2.999	8.700	.13300	-.04120	.29410	.21930	-.04440	.14140	-.32460	.57460
2.999	GRADIENT	-.00028	.00075	-.00017	.00032	-.01466	.01492	-.03495	-.00016

RUN NO. 227/ 0   RNVL =   1.99   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV
3.502	-8.720	.07430	-.01130	.26710	.20670	.03790	-.12630	.28970	.05340
3.502	-6.550	.07100	-.00670	.25380	.20470	.02690	-.09320	.22940	.05910
3.502	-4.330	.04790	.00960	.26060	.20290	.01670	-.05780	.12910	.05770
3.502	-2.140	.05000	.00790	.25900	.20150	.00720	-.02710	.05580	.05760
3.502	2.260	.04900	.00860	.25970	.20030	-.00930	.03920	-.03370	.05940
3.502	2.260	.05900	.00420	.26140	.20050	-.01870	.06430	-.15430	.06790
3.502	4.460	.06200	.00140	.26350	.20490	-.02920	.09960	-.23520	.05958
3.502	6.660	.06590	.00630	.26580	.20591	-.03980	.13220	-.31590	.05990
3.502	8.860	.07568	-.00346	.00010	-.00027	-.00397	.01394	-.03218	.00037
3.502	GRADIENT								

DATE 26 OCT 73 TABULATED SOURCE FORCE DATA-1A9C

AMES 87-707 1A9 OEA + SS + T9 EXTERNAL TANK (R8AC09) (30 MAY 73)

PARAMETRIC DATA

REFERENCE DATA

SREF :	2.4210 SQ.FT.	XMRP :	28.5920 IN.		ALPHA =	6.000	ORBINC =	.500
LREF :	39.0490 IN.	YMRP :	.0000 IN.		RUDDER =	.000	ELEVON =	.000
BREF :	59.0490 IN.	ZMRP :	.0000 IN.		RUDFLR =	.000		
SCALE :	.0000 SCALE							

RUN NO. 248/ 0 RN/L = 1.50 GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV
2.498	-8.410	.27600	-.10550	.33480	.23720	.04710	-.15620	.14360	.09780
2.498	-6.290	.26400	-.09510	.33160	.23660	.03520	-.11460	.25000	.09510
2.498	-6.290	.26030	-.09180	.32840	.23530	.02280	-.07539	.9990	.09310
2.498	-4.170	.26300	-.09540	.32670	.23900	.01030	-.03750	.17710	.08990
2.498	-2.080	.26500	-.09560	.32840	.23760	-.01290	.03530	-.06310	.09390
2.498	2.160	.26400	-.10290	.32730	.23770	-.02490	.07240	-.16650	.08960
2.498	4.300	.27500	-.10290	.33090	.23690	-.03750	.11280	-.25550	.09160
2.498	6.440	.27600	-.11260	.33900	.23950	-.04970	.15290	-.34650	.09350
2.498	8.570	.28600	-.00100	.00012	.00016	-.00558	.01720	-.03839	-.00027
GRADIENT		-.00118							

RUN NO. 238/ 0 RN/L = 2.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV
2.999	-8.560	.25100	-.07840	.29030	.21670	.04310	-.14020	.31750	.07380
2.999	-6.400	.22900	-.06940	.28610	.21240	.03180	-.10900	.23550	.07350
2.999	-4.290	.21370	-.06160	.28330	.21100	.02370	-.06900	.15940	.07290
2.999	-2.130	.22900	-.05880	.28510	.21370	.00940	-.03360	.07450	.07140
2.999	2.210	.21300	-.06210	.28500	.21420	-.01080	.02920	-.07310	.07380
2.999	2.210	.21000	-.06110	.28380	.21050	-.02190	.05910	-.14700	.07320
2.999	4.380	.22600	-.07240	.28790	.21450	-.03390	.09750	-.23310	.07290
2.999	6.590	.23600	-.08200	.29210	.21860	-.04520	.13720	-.31770	.07380
2.999	8.720	-.00009	-.00011	.00034	-.00001	-.00485	.01441	-.03441	.00056
GRADIENT									

RUN NO. 228/ 0 RN/L = 1.99 GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV
3.502	-8.710	.16400	-.04720	.26490	.20510	.03690	-.11900	.28020	.05900
3.502	-6.510	.15400	-.03690	.26120	.20210	.02840	-.08880	.20180	.05910
3.502	-4.320	.13700	-.02450	.25610	.19800	.01730	-.05420	.12220	.05810
3.502	-2.130	.13400	-.02160	.25520	.19830	.00770	-.02470	.05200	.05690
3.502	2.260	.12800	-.01820	.25600	.20030	-.01010	.02340	-.06390	.05570
3.502	2.260	.14600	-.03060	.25740	.20070	-.01990	.06190	-.15310	.05570
3.502	4.470	.14200	-.02960	.26140	.20150	-.03090	.09560	-.23160	.05990
3.502	6.670	.16100	-.04430	.26390	.20450	-.04110	.12570	-.35800	.05940
3.502	8.680	-.00055	-.00040	.00015	.00034	-.00421	.01326	-.03125	-.00018
GRADIENT									

DATE 06 OCT 73   TABULATED SOURCE FORCE DATA-1A9C

AMES 67-7D7 IA9 OZA + S3 + T9 EXTERNAL TANK   (R0421D) (30 MAY 73)

REFERENCE DATA   PARAMETRIC DATA

SREF =	2.4210 SQ.FT.	XMRP =	28.5300 IN.	ALPHA =	8.000
LREF =	39.6490 IN.	YMRP =	.0000 IN.	RUDDER =	.000
BREF =	39.6490 IN.	ZMRP =	.0000 IN.	RUDFLR =	.000
SCALE =	.0300 SCALE				

ORBINC = .200
ELEVON = .000

RUN NO. 249/ 0 RNVL = 1.50 GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV
2.498	-8.380	.38900	-.15150	.33240	.23810	.04890	-.14970	.33580	.09940
2.498	-6.270	.39400	-.15090	.32920	.23790	.03640	-.10930	.24970	.09170
2.498	-4.170	.56600	-.13140	.32610	.25770	.02400	-.07110	.15940	.08830
2.498	-2.060	.36600	-.13220	.32530	.23990	.01090	-.03500	.07730	.08610
2.498	2.100	.37200	-.13740	.32660	.23830	-.01220	.02970	-.07690	.08430
2.498	2.160	.38000	-.14290	.32570	.23790	-.02550	.06570	-.15900	.08430
2.498	4.320	.38830	-.14830	.32740	.23550	-.03860	.10520	-.24780	.09190
2.498	6.430	.39600	-.15610	.33110	.23930	-.05140	.14810	-.34100	.09190
2.498	8.560	.00160	-.00133	.00002	-.00007	-.00575	.01599	-.03726	.00009
2.498	GRADIENT								

RUN NO. 239/ 0 RNVL = 2.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV
2.999	-8.540	.32900	-.11720	.28770	.21920	.04460	-.13470	.31030	.07290
2.999	-6.390	.32100	-.10840	.28360	.21270	.03310	-.09780	.22630	.07090
2.999	-4.240	.39800	-.09590	.27980	.20900	.02190	-.05940	.14240	.06980
2.999	-2.090	.30900	-.09660	.28090	.20980	.01000	-.02920	.06850	.07570
2.999	2.230	.30920	-.09770	.28130	.21170	-.01140	.02620	-.07180	.06980
2.999	4.400	.31700	-.10430	.28060	.21090	-.02350	.05610	-.14590	.06970
2.999	6.570	.33900	-.12340	.28440	.21300	-.03510	.09320	-.22780	.07150
2.999	8.740	.33300	-.11940	.28860	.21770	-.04670	.13090	-.31070	.07090
2.999	GRADIENT	.00102	-.00087	.00012	.00026	-.00514	.01326	-.03318	-.00004

RUN NO. 229/ 0 RNVL = 1.99 GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV
3.502	-8.690	.24600	-.07760	.26180	.20370	.04020	-.11360	.27270	.05810
3.502	-6.500	.23500	-.06650	.25760	.20070	.02990	-.08290	.19570	.05770
3.502	-4.310	.23800	-.06530	.25130	.19610	.01900	-.05120	.12010	.05520
3.502	-2.130	.22700	-.05790	.25080	.19670	.00960	-.02120	.04870	.05410
3.502	2.160	.23200	-.06200	.25140	.19640	-.01090	.02920	-.07900	.05570
3.502	4.480	.24200	-.06810	.25240	.19570	-.02130	.05690	-.14970	.05560
3.502	6.630	.23420	-.06560	.25570	.19940	-.03180	.08560	-.22140	.05630
3.502	8.900	.25500	-.08240	.26120	.20270	-.04240	.11870	-.35080	.05960
3.502	GRADIENT	.00060	-.00044	.00013	-.00005	-.00457	.01215	-.03322	.00017

DATE 26 OCT 73   TABULATED SOURCE FORCE DATA-IA9C

AMES 87-737 IA9 O2A + S3 + T5 EXTERNAL TANK

(03X211) (30 MAY 73)

REFERENCE DATA

SREF =	2.4210 SQ.FT.	XMRF = 28.5300 IN.
LREF =	39.8400 IN.	YMRF = .0000 IN.
BREF =	39.8400 IN.	ZMRF = .0000 IN.
SCALE =	.0300 SCALE	

PARAMETRIC DATA

ALPHA = -8.000	ORBINC = .900
RUDDER = -15.000	ELEVON = .000
RUDFLR = .000	

RUN NO. 287/ 0   RVL = 1.50   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CA	CAF	CBL	CYN	CY	CSLV
2.498	-8.590	-.46300	.34600	.22770	.03600	-.15490	.3711E	.15340
2.498	-6.270	-.46300	.34470	.24140	.02480	-.11350	.27570	.15340
2.498	-4.160	-.46300	.34030	.23690	.01210	-.06660	.16630	.15340
2.498	.060	-.46300	.33710	.23680	-.00600	.01320	-.01630	.15030
2.498	4.330	-.46300	.34060	.24050	-.02480	.09470	-.22270	.09740
2.498	4.330	-.46300	.34270	.24200	-.03700	.14220	-.35440	.12360
2.498	6.480	-.46300	.34770	.24300	-.04950	.18310	-.40210	.09960
2.498	8.620	-.46300	.34560	.24300	-.00435	.01900	-.04340	-.00071
	GRADIENT	-.00024	.00004	.00074				

RUN NO. 286/ 0   RVL = 2.00   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CA	CAF	CBL	CYN	CY	CSLV
2.979	-8.560	-.42400	.30600	.22490	.03650	-.15630	.36820	.06190
2.979	-6.410	-.42300	.30230	.22290	.02660	-.11730	.27620	.07940
2.979	-4.280	-.42300	.29910	.21960	.01480	-.07590	.17970	.07940
2.999	.050	-.42100	.29680	.21820	-.00490	.01140	-.01170	.07870
2.999	4.400	-.42300	.29930	.22190	-.02430	.09590	-.20250	.07740
2.999	6.560	-.42200	.30400	.22450	-.03570	.14020	-.29960	.07960
2.999	8.790	-.42200	.30830	.29320	-.04740	.16170	-.39530	.07810
	GRADIENT	-.00035	.00002	.00027	-.00451	.01961	-.04405	-.00023

RUN NO. 250/ 0   RVL = 2.50   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CA	CAF	CBL	CYN	CY	CSLV
3.502	-8.710	-.39300	.28790	.22720	.03720	-.15390	.35450	.05050
3.502	-6.520	-.38400	.28160	.21960	.02590	-.11500	.27170	.06350
3.502	-4.330	-.38500	.27640	.21570	.01410	-.07480	.17710	.05050
3.502	.050	-.38300	.27540	.20990	-.00423	.01020	-.00900	.06050
3.502	4.470	-.38200	.27770	.21640	-.02260	.09490	-.19840	.06130
3.502	6.690	-.38300	.28210	.21990	-.03340	.13590	-.29190	.06220
3.502	8.920	-.38520	.28680	.22610	-.04485	.17450	-.38380	.06070
	GRADIENT	-.00034	.00015	.00028	-.00417	.01928	-.04267	-.00067

DATE 28 OCT 71   SIMULATED SOURCE FORCE DATA-IA9C

AMES 87-757 IA9 O2A + S3 + T9 EXTERNAL TANK   (RSN622) (30 NOV 72)

REFERENCE DATA

				PARAMETRIC DATA
SREF =	2.4210 SQ.FT.	XREF =	28.5390 IN.	ALPHA = -4.000 OBSNC = .300
LREF =	39.8490 IN.	YREF =	.0000 IN.	RUDDER = -15.000 ELEVON = .000
BREF =	39.8490 IN.	ZREF =	.0000 IN.	RUDFLR = .000
SCALE =	.0330 SCALE			

RUN NO. 266/ 0   RVL = 1.50   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV
2.496	-8.420	-.24300	.09420	.34180	.23850	.03750	-.14210	.34790	.15310
2.496	-6.300	-.24700	.09940	.34100	.23580	.02690	-.10130	.29210	.15420
2.496	-4.180	-.24800	.09980	.33520	.23480	.01390	-.06020	.18090	.15140
2.496	-.050	-.25200	.09050	.32730	.23490	-.00340	.00940	-.00140	.09510
2.496	4.310	-.25900	.09740	.33690	.23790	-.02440	.07830	-.17720	.09530
2.496	5.430	-.24100	.09840	.34160	.23960	-.03550	.12110	-.27200	.10100
2.496	6.560	-.24000	.09420	.34100	.24720	-.04810	.16300	-.37020	.09920
2.496	8.560	.00108	-.00728	.00004	.00037	-.00441	.01631	-.03948	-.00003
GRADIENT									

RUN NO. 257/ 0   RVL = 2.00   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV
2.999	-8.580	-.22900	.08980	.29910	.21800	.03560	-.14200	.33990	.08120
2.999	-6.430	-.22600	.09020	.28460	.21290	.02406	-.10110	.24570	.08110
2.999	-4.270	-.22600	.08980	.28990	.21090	.01330	-.06090	.15450	.06020
2.999	.090	-.22300	.08690	.28790	.21220	-.00060	.01280	-.01615	.07580
2.999	4.380	-.22900	.09220	.29110	.21450	-.02240	.08480	-.18480	.07560
2.995	6.550	-.22650	.09300	.29470	.21780	-.03270	.12450	-.27470	.07690
2.995	8.710	-.22170	.09560	.30020	.22340	-.04390	.16440	-.36550	.07690
2.999		-.00103	.00028	.00002	.00042	-.00413	.01676	-.03920	-.07739
GRADIENT									

RUN NO. 251/ 0   RVL = 1.99   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV
3.502	-8.740	-.22300	.09160	.27720	.21730	.03350	-.14210	.33390	.13990
3.502	-6.540	-.22200	.09150	.27220	.20970	.02270	-.10570	.24990	.05250
3.502	-4.390	-.21400	.08380	.26680	.20590	.01270	-.05560	.16050	.05010
3.502	-.050	-.21300	.08490	.26010	.20170	-.00365	.01110	-.01190	.01190
3.502	4.460	-.22000	.09200	.26660	.20630	-.02020	.08750	-.19140	.01010
3.502	6.600	-.22190	.09360	.27190	.21080	-.03010	.12450	-.27290	.03000
3.502	8.650	-.22100	.09310	.27540	.21580	-.04090	.16000	-.35700	.05500
3.502		-.00160	.00035	-.00002	.00055	-.00373	.01731	-.03315	-.00000
GRADIENT									

DATE 09 OCT 73   TABULATED SOURCE FORCE DATA-IA9C

(RBN2151)   (30 MAY 73)

AMES 87-757 IA9 OEA + S3 + T9 EXTERNAL TANK

PARAMETRIC DATA

REFERENCE DATA

			ALPHA =	.000	ORBINC =	.500
SREF =	2.4210 SQ.FT.	XMRP =	28.5300 IN.	RUDDER =	-15.000	ELEVON =	.000
LREF =	39.0400 IN.	YMRP =	.0000 IN.	RUDFLR =	.000		
BREF =	39.0400 IN.	ZMRP =	.0000 IN.				
SCALE =	.0000 SCALE						

RUN NO. 285/ 0   RVL = 1.50   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV
2.498	-8.420	-.03000	.01300	.33550	.23420	.03920	-.14340	.33680	.10140
2.498	-6.300	-.03500	.01700	.33800	.23700	.02690	-.10340	.24310	.10130
2.498	-4.180	-.03200	.01710	.33460	.23780	.01530	-.06900	.15170	.09680
2.498	.060	-.04500	.02240	.33060	.23670	-.00560	.01040	-.01390	.09390
2.498	.060	-.03100	.01700	.33490	.24220	-.02660	.08210	-.17720	.09280
2.498	4.350	-.03200	.01690	.33800	.24470	-.03790	.12260	-.26730	.09330
2.498	6.420	-.02800	.01270	.33740	.24810	-.09080	.16410	-.35420	.08920
2.498	8.540								
2.498	GRADIENT	.00012	-.00001	.00004	.00052	-.00494	.01711	-.03979	-.00047

RUN NO. 258/ 0   RVL = 1.99   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV
2.999	-8.580	-.05000	.02690	.29570	.22100	.03670	-.13740	.32410	.07470
2.999	-6.420	-.05500	.02960	.29360	.21940	.02520	-.09860	.23550	.07420
2.999	-4.260	-.05400	.02910	.29070	.21870	.01390	-.06000	.19020	.07200
2.999	.060	-.05400	.03040	.29030	.21860	-.00480	.01030	-.01470	.07170
2.999	4.380	-.05800	.03090	.29180	.21970	-.02290	.07690	-.17290	.07110
2.999	6.540	-.05700	.03140	.29470	.22150	-.03590	.11480	-.25740	.07340
2.999	8.690	-.05400	.02800	.29680	.22770	-.04520	.15520	-.34690	.06900
2.999	GRADIENT	-.00023	.00014	.00001	.00012	-.00426	.01584	-.03735	-.00310

RUN NO. 252/ 0   RVL = 1.99   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV
3.502	-8.730	-.05800	.03430	.26720	.20770	.03450	-.13640	.32560	.05990
3.502	-6.550	-.05900	.03720	.26600	.20760	.02360	-.10040	.23690	.05940
3.502	-4.350	-.06070	.03800	.26280	.20420	.01360	-.06350	.15320	.05860
3.502	.030	-.06700	.04000	.26050	.20260	-.00300	.00630	-.00390	.05790
3.502	4.450	-.06190	.03910	.26250	.20400	-.01940	.07470	-.16120	.05850
3.502	6.650	-.06200	.04000	.26630	.20580	-.02930	.11100	-.24370	.06050
3.502	8.840	-.05900	.03710	.26760	.21060	-.03990	.14730	-.32800	.05700
3.502	GRADIENT	-.00011	.00013	-.00003	-.00002	-.00375	.01570	-.03573	-.00001

DATE 30 OCT 73   TABULATED SOURCE FORCE DATA-1A9C

AMES 87-737 IA9 O2A + S3 + T9 EXTERNAL TANK   (RBN214)   (30 MAY 73)

REFERENCE DATA   PARAMETRIC DATA

SREF = 2.6210 SQ.FT.   XMRP = 28.5300 IN.   ALPHA =   4.000   ORBINC = .500
LREF = 39.8400 IN.   YMRP = .0000 IN.   RUDDER = -15.000   ELEVON = .000
BREF = 39.0400 IN.   ZMRP = .0000 IN.   RUDFLR =   .000
SCALE = .0300 SCALE

RUN NO. 264/ 0   RN/L = 1.50   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV
2.498	-8.410	.17100	-.06480	.33960	.24140	.04340	-.15170	.34490	.09890
2.498	-6.290	.16790	-.05890	.33790	.24160	.03130	-.11160	.25300	.09590
2.498	-4.180	.16400	-.05540	.33410	.24070	.01870	-.07000	.16190	.09340
2.498	-.060	.15700	-.05200	.33370	.24260	-.00460	.00590	-.00640	.09110
2.498	4.310	.16500	-.05650	.33320	.24470	-.02780	.08170	-.17290	.08860
2.498	6.430	.16800	-.06000	.33710	.24880	-.03980	.12230	-.26220	.08830
2.498	8.580	.17200	-.06540	.34030	.24540	-.05200	.16280	-.35590	.09490
GRADIENT		.00012	-.00013	-.00011	.00047	-.00548	.01787	-.03936	-.00057

RUN NO. 259/ 0   RN/L = 1.99   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV
2.999	-8.560	.13300	-.04070	.29550	.22400	.04060	-.13960	.32260	.07150
2.999	-6.410	.12600	-.03240	.29280	.22050	.02920	-.10240	.23650	.07230
2.999	-4.250	.13100	-.03270	.29040	.21910	.01700	-.05960	.14530	.07130
2.999	.060	.12500	-.02720	.29190	.22220	-.00380	.01650	-.00910	.06970
2.999	4.380	.12600	-.03160	.29050	.21910	-.02460	.07170	-.16370	.07120
2.999	6.550	.13000	-.03520	.29340	.22030	-.03650	.11170	-.24940	.07310
2.999	8.710	.13900	-.04380	.29600	.22320	-.04770	.14950	-.33480	.07280
GRADIENT		-.00058	.00013	-.00201	-.00020	-.00482	.01521	-.03581	-.00001

RUN NO. 255/ 0   RN/L = 1.99   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV
3.502	-8.730	.11100	-.02260	.26150	.20400	.03630	-.12650	.29910	.05750
3.502	-6.550	.10200	-.01940	.25890	.19990	.02560	-.09200	.21580	.05930
3.502	-4.340	.09900	-.01660	.25570	.19700	.01520	-.05570	.13490	.05870
3.502	.050	.09200	-.01200	.25420	.19700	-.00300	.00790	-.00800	.05720
3.502	4.450	.09700	-.01550	.25690	.20070	-.02100	.06760	-.14930	.05620
3.502	6.660	.10100	-.01850	.25920	.20090	-.03150	.10310	-.23050	.05880
3.502	8.860	.11300	-.02850	.26180	.20330	-.04210	.13560	-.31070	.05850
GRADIENT		-.00023	.00012	.00014	.00042	-.00412	.01403	-.03233	-.00026

DATE 08 OCT 73　　　TABULATED SOURCE FORCE DATA-IA9C

AMES 87-727 IA9 O2A + S3 + T9 EXTERNAL TANK

（RBN215）　（30 MAY 73）

REFERENCE DATA　　　　　　　　　　　　　　　　　　　PARAMETRIC DATA

SREF =	2.4210 SQ.FT.	XMRP =	28.5300 IN.
LREF =	39.0400 IN.	YMRP =	.0000 IN.
BREF =	39.0400 IN.	ZMRP =	.0000 IN.
SCALE =	.0300 SCALE		

ALPHA = 6.000　ORBINC = .500
RUDDER = -15.000　ELEVON = .000
RUDFLR = .000

RUN NO. 263/ 0　RN/L = 1.50　GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV
2.498	-8.390	.28700	-.11120	.33700	.24180	.04480	-.15080	.34100	.09580
2.498	-6.280	.27600	-.10190	.33360	.24090	.03260	-.10690	.24690	.09260
2.498	-4.160	.27700	-.09670	.33030	.24010	.01980	-.06720	.15630	.09020
2.498	.060	.28900	-.08920	.33170	.24430	-.00430	.00630	-.00680	.08740
2.498	4.310	.27700	-.09920	.33090	.24630	-.02680	.07990	-.17070	.08460
2.498	4.310	.28300	-.10480	.33540	.24770	-.04090	.12120	-.26070	.08770
2.498	6.440	.28900	-.11180	.33790	.24810	-.05330	.16180	-.35380	.08980
2.498	6.570	.00039	-.00030	.00007	.00073	-.00374	.01737	-.03861	-.00068
GRADIENT									

RUN NO. 280/ 0　RN/L = 2.00　GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV
2.999	-8.550	.23000	-.07780	.29290	.22320	.04130	-.13650	.31670	.08980
2.999	-6.470	.22100	-.06790	.29000	.22170	.03000	-.09930	.23350	.06820
2.999	-4.240	.21600	-.06320	.28720	.21820	.01790	-.05910	.14710	.06900
2.999	.060	.20900	-.05860	.29120	.22060	-.00340	.00430	-.00650	.07060
2.999	4.390	.21500	-.06360	.28720	.21920	-.02510	.06540	-.15570	.06800
2.999	4.390	.22300	-.06970	.28990	.22020	-.03690	.10400	-.23930	.06970
2.999	6.570	.23800	-.08120	.29400	.22270	-.04830	.14390	-.32580	.07120
2.999	8.730	-.00011	-.00005	-.00000	.00012	-.00498	.01443	-.03509	-.00012
GRADIENT									

RUN NO. 254/ 0　RN/L = 1.99　GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV
3.502	-8.710	.20200	-.06450	.25930	.20130	.03780	-.12090	.29250	.05770
3.502	-6.520	.19000	-.05250	.25620	.19850	.02740	-.09140	.21470	.05760
3.502	-4.330	.18200	-.04610	.25070	.19340	.01640	-.05600	.13620	.05730
3.502	.050	.18100	-.04490	.24970	.19300	-.00260	.00590	-.00570	.05660
3.502	4.480	.18300	-.04660	.25230	.19900	-.02130	.06240	-.14230	.05730
3.502	6.660	.19200	-.05310	.25670	.20020	-.03240	.09620	-.22090	.05640
3.502	8.890	.20200	-.06330	.25980	.21760	-.04290	.12730	-.29950	.05900
3.502		.00011	-.00006	.00018	.00018	-.00429	.01347	-.03168	.00000
GRADIENT									

DATE 28 OCT 73   TABULATED SOURCE FORCE DATA-IA9C

(RDN216)   (3C MAY 73)

AMES 87-T37 IA9 O2A + S3 + T9 EXTERNAL TANK

REFERENCE DATA

			PARAMETRIC DATA		
SREF =	2.4210 SQ.FT.	XREF =	28.3320 IN.	ALPHA =	8.000	ORBINC =	.900
LREF =	39.8490 IN.	YREF =	.0000 IN.	RUDDER =	-15.000	ELEVON =	.000
BREF =	39.8490 IN.	ZREF =	.0000 IN.	RUDFLR =	.000		
SCALE =	.0300 SCALE						

RUN NO. 262/ 0   RNVL = 1.50   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV
2.498	-8.370	.39200	-.15270	.33410	.24210	.04690	-.14610	.33675	.09190
2.498	-6.270	.38300	-.14350	.33110	.24320	.03390	-.10560	.24690	.08780
2.498	4.160	.37530	-.13640	.32770	.24350	.02120	-.06470	.15790	.08430
2.498	.060	.35820	-.13230	.32990	.24320	-.00370	.00560	-.00390	.08620
2.498	4.330	.38200	-.14080	.32890	.24390	-.02690	.07230	-.16230	.08440
2.498	4.330	.35900	-.14710	.33130	.24320	-.04180	.11360	-.24200	.08810
2.498	6.460	.39900	-.15870	.33400	.24450	-.05480	.15550	-.34540	.09940
2.498	8.500	.40600		.33400		-.00590	.01614	-.03771	.05001
	GRADIENT	.00083	-.00052	.00003	.00002				

RUN NO. 261/ 0   RNVL = 1.99   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV
2.999	-8.530	.33200	-.11920	.29080	.22080	.04260	-.13100	.30910	.07000
2.999	-6.380	.32300	-.10890	.28690	.21580	.03120	-.09320	.22520	.07110
2.999	-4.230	.31600	-.10140	.28370	.21900	.01920	-.05380	.14700	.06870
2.999	.060	.31100	-.09710	.28640	.21740	-.00330	.00410	-.00600	.06900
2.999	4.400	.31600	-.10230	.28380	.21930	-.02580	.06050	-.15190	.06450
2.999	6.580	.32700	-.11080	.28630	.21940	-.03760	.09730	-.23270	.06690
2.999	8.750	.33900	-.12160	.28980	.22240	-.04940	.13650	-.31750	.06740
2.999		.00000	-.00011	.00001	.00090	-.00521	.01324	-.03378	-.00049
	GRADIENT								

RUN NO. 255/ 0   RNVL = 1.99   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV
3.902	-8.690	.29100	-.09900	.25690	.20030	.03930	-.11480	.28480	.05660
3.902	-6.500	.28100	-.08870	.25310	.19680	.02870	-.08360	.20620	.05630
3.902	-4.320	.27500	-.08200	.24710	.19220	.01790	-.05090	.12840	.05480
3.902	.050	.26800	-.07650	.24760	.19000	-.00250	.00480	-.00540	.05760
3.902	4.470	.27350	-.08200	.24940	.19230	-.02300	.05890	-.14010	.05610
3.902	6.680	.28400	-.08980	.25210	.19700	-.03360	.08850	-.21370	.05510
3.902	8.900	.29350	-.09670	.25750	.19980	-.04420	.11930	-.29060	.05750
3.902	GRADIENT	.00000	-.00000	.00015	.00001	-.00465	.01240	-.03055	.00015

DATE 26 OCT 73   TABULATED SOURCE FORCE DATA-IA9C

AMES 87-707 IA9 O2A + S3 + T9 EXTERNAL TANK   ORBM217   (30 MAY 73)

REFERENCE DATA

SREF = 2.4210 SQ.FT.   XMRP = 28.5390 IN.
LREF = 39.8490 IN.   YMRP = .0000 IN.
BREF = 39.8490 IN.   ZMRP = .0000 IN.
SCALE = .0300 SCALE

PARAMETRIC DATA

ALPHA = -6.000   ORBINC = .900
RUDDER = -10.000 ELEVON = .000
RUDFLR = .000

RUN NO. 274/ 0   RNVL = 1.50   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV
2.499	-6.590	-.46900	.18280	.34090	.23470	.04100	-.16220	.38780	.10560
2.499	-6.280	-.46550	.18290	.33790	.23430	.02810	-.12340	.29120	.10360
2.499	-4.180	-.46200	.18900	.33220	.22910	.01540	-.07660	.18650	.10310
2.499	.060	-.45930	.18270	.32890	.22870	-.00340	.00790	-.00620	.10020
2.499	4.330	-.46100	.18370	.33290	.23490	-.02900	.09300	-.20130	.09800
2.499	6.470	-.46000	.18270	.33610	.23410	-.03900	.13970	-.30210	.10200
2.499	8.600	-.46200	.18180	.34140	.24250	-.04710	.17870	-.39860	.09690
GRADIENT		.00012	.00008	.00008	.00068	-.00452	.01998	-.04568	-.00061

RUN NO. 280/ 0   RNVL = 2.00   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV
2.999	-6.540	-.41700	.16060	.31080	.23340	.03970	-.15970	.37270	.07740
2.999	-4.240	-.41600	.15320	.30390	.22710	.01620	-.07680	.18000	.07810
2.999	.060	-.41700	.16490	.30020	.22510	-.00340	.00890	-.01090	.07520
2.999	4.410	-.41800	.16460	.30240	.22630	-.02290	.09310	-.20110	.07600
2.999	8.760	-.41800	.16270	.31020	.23330	-.04560	.17770	-.39260	.07690
GRADIENT		-.00023	.00016	-.00010	-.00009	-.00452	.01964	-.04406	-.00001

RUN NO. 268/ 0   RNVL = 1.98   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV
3.502	-6.720	-.38100	.14700	.24270	.23610	.03730	-.15360	.36190	.05660
3.502	-6.510	-.38220	.14720	.28790	.22690	.02580	-.11530	.26880	.05920
3.502	-4.320	-.38400	.15000	.28380	.22560	.01490	-.07660	.17710	.05820
3.502	.060	-.37900	.14810	.27740	.21990	-.00260	.00620	-.00460	.05790
3.502	4.490	-.38400	.15030	.28380	.22690	-.02040	.08950	-.19020	.05660
3.502	6.700	-.38300	.14990	.28790	.23060	-.03130	.12920	-.28390	.05670
3.502	8.910	-.38100	.14990	.29130	.23480	-.04250	.16810	-.37590	.05650
GRADIENT		-.00000	.00003	.00200	.00015	-.00401	.01885	-.04169	-.00016

DATE 28 OCT 73   TABULATED SOURCE FORCE DATA-TASK

(RBN218)   (30 MAY 73)

AMES 87-T57 IA9 O2A + S3 + T9 EXTERNAL TANK

REFERENCE DATA

SREF =	2.4210 SQ.FT.	XMRF =	28.5300 IN.
LREF =	39.6490 IN.	YMRF =	.0000 IN.
BREF =	39.6490 IN.	ZMRF =	.0000 IN.
SCALE =	.0350 SCALE		

PARAMETRIC DATA

ALPHA =	-4.000	ORBINC =	.500
RUDDER =	-10.000	ELEVON =	.000
RUDFLR =	.000		

RUN NO. 275/ 0   RNVL = 1.50   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV
2.498	-5.420	-.23900	.08990	.33680	.23440	.04080	-.14990	.36300	.10240
2.498	-5.390	-.23900	.09300	.33560	.23200	.02800	-.10600	.26120	.1038L
2.498	-5.180	-.23900	.09370	.33140	.22740	.01570	-.06280	.16270	.10400
2.498	.060	-.23100	.08750	.32280	.22810	-.00320	.00710	-.00760	.09470
2.498	4.310	-.24100	.09510	.32920	.23050	-.02270	.07680	-.17800	.09860
2.498	6.430	-.24000	.09460	.33430	.23220	-.03480	.12140	-.27520	.10210
2.498	8.560	-.23700	.08980	.33450	.23960	-.04640	.16300	-.37180	.09500
2.498	GRADIENT	-.00024	.00017	-.00026	.00037	-.00452	.01644	-.04013	-.00064

RUN NO. 281/ 0   RNVL = 2.00   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV
2.999	-8.560	-.22900	.08810	.30200	.22490	.03690	-.14420	.34190	.07710
2.999	-4.280	-.22900	.08790	.29400	.21690	.01460	-.06390	.15790	.07720
2.999	.060	-.22200	.08470	.29050	.21650	-.00340	.00970	-.01450	.07400
2.999	4.390	-.22400	.08940	.29330	.21850	-.02120	.08230	-.18470	.07480
2.999	8.720	-.22400	.08820	.30150	.22540	-.04260	.16110	-.36390	.07610
2.999	GRADIENT	-.00012	.00017	-.00008	.00019	-.00414	.01690	-.03956	-.00028

RUN NO. 269/ 0   RNVL = 1.99   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV
3.502	-8.730	-.22350	.09120	.28140	.22240	.03350	-.14090	.33370	.05900
3.502	-6.530	-.22200	.09090	.27670	.21720	.02250	-.10370	.24350	.05950
3.502	-4.330	-.21800	.09010	.27240	.21490	.01300	-.06670	.15760	.05740
3.502	.060	-.21200	.08450	.26690	.21140	-.00270	.00840	-.01070	.05550
3.502	4.470	-.21700	.09040	.27190	.21550	-.01820	.08210	-.17730	.05660
3.502	6.670	-.21600	.09170	.27570	.21620	-.02800	.11840	-.26290	.05760
3.502	8.870	-.21900	.09210	.27970	.22340	-.03860	.15380	-.34770	.05640
3.502	GRADIENT	.00011	.00004	-.00026	.00005	-.00355	.01691	-.03806	-.00009

DATE 26 OCT 73   TABULATED SOURCE FORCE DATA-TASK

AMES 67-717 IA9 O2A + S3 + T9 EXTERNAL TANK

(R04219) (30 MAY 73)

REFERENCE DATA

PARAMETRIC DATA

SREF =	2.4210 SQ.FT.	XREF =	28.5500 IN.
LREF =	39.8490 IN.	YREF =	.0000 IN.
BREF =	39.8490 IN.	ZREF =	.0000 IN.
SCALE =	.0300 SCALE		

ALPHA =	.000	ORBINC =	.000
RUDDER =	-10.000	ELEVON =	.000
RUDFLR =	.000	

RUN NO. 276/ 0 RNVL = 1.50 GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV
2.499	-8.450	-.04000	.01380	.33400	.23270	.04290	-.15220	.35520	.10130
2.499	-6.315	-.04200	.01810	.35700	.23650	.03010	-.11110	.26120	.10050
2.499	-4.180	-.04000	.01790	.33400	.23430	.01830	-.07060	.16690	.09970
2.499	.060	-.04000	.01830	.39050	.23420	-.00220	.00150	.00270	.09650
2.499	4.300	-.04100	.01820	.33320	.23810	-.02380	.07590	-.16960	.09500
2.499	6.430	-.04200	.01870	.33640	.24160	-.03520	.11770	-.25970	.09470
2.499	8.550	-.03900	.01530	.33590	.24590	-.04770	.15920	-.35530	.09060
	GRADIENT	-.00012	.00004	-.00009	.00045	-.00496	.01728	-.03980	-.00035

RUN NO. 282/ 0 RNVL = 1.99 GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV
2.999	-8.580	-.05500	.02790	.29470	.21980	.03760	-.13990	.32590	.07900
2.999	-4.260	-.05700	.03010	.28960	.21620	.01550	-.06380	.15370	.07340
2.999	.060	-.05900	.03150	.28900	.21790	-.00320	.00780	-.01250	.07170
2.999	4.380	-.05900	.03080	.28970	.21630	-.02160	.07650	-.17200	.07340
2.999	8.710	-.05700	.02820	.29520	.22510	-.04400	.15510	-.34830	.07310
	GRADIENT	-.00023	.00058	.00001	.00001	-.00427	.01624	-.03770	.00000

RUN NO. 277/ 0 RNVL = 1.99 GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV
3.502	-8.740	-.06870	.03840	.26960	.21170	.03360	-.13340	.31290	.05830
3.502	-6.540	-.06890	.04010	.26810	.21210	.02390	-.09830	.23020	.05600
3.502	-4.340	-.07000	.04100	.26440	.20870	.01330	-.06160	.14720	.05570
3.502	.060	-.07000	.04020	.26210	.20700	-.00280	.00740	-.00980	.05510
3.502	4.460	-.06900	.04120	.26440	.20770	-.01860	.07400	-.16400	.05680
3.502	6.660	-.07000	.04180	.26810	.21040	-.02850	.11020	-.24580	.05780
3.502	8.860	-.06900	.03940	.26960	.21430	-.03910	.14650	-.33070	.05540
	GRADIENT	.00011	.00002	-.00000	-.00011	-.00362	.01541	-.03536	.00013

AMES 87-707 IA9 O2A + S3 + T9 EXTERNAL TANK

REFERENCE DATA

			PARAMETRIC DATA	
SREF =	2.4215 SQ.FT.	XMRP = 22.5500 IN.	ALPHA = 4.000	ORBINC = .500
LREF =	39.8495 IN.	YMRP = .0000 IN.	RUDDER = -10.000	ELEVON = .000
BREF =	39.8495 IN.	ZMRP = .0000 IN.	RUDFLR = .000	
SCALE =	.0350 SCALE			

RUN NO. 277/ 0   RN/L = 1.99   GRADIENT INTERVAL = -3.00/ 5.00

MACH	BETA	CN	CLM	CA	CBL	CYN	CY	CABLV
2.499	-8.415	.17990	-.06590	.33470	.04360	-.15960	.34000	.09340
2.499	-6.290	.16400	-.05910	.33130	.03190	-.15890	.24520	.09430
2.499	-4.175	.16000	-.05610	.32770	.01990	-.05780	.15600	.09230
2.499	.060	.15990	-.05340	.32890	-.00260	.00420	-.00490	.09010
2.499	4.310	.16100	-.05790	.32890	-.02500	.07710	-.16590	.08740
2.499	4.315	.17990	-.05280	.33190	-.03790	.11690	-.25710	.08970
2.499	6.430	.17990	-.05850	.33670	-.04940	.15920	-.34970	.09290
2.499	8.550	.17570	-.00017	.00014	-.05525	.01703	-.03796	-.00058
	GRADIENT	.00012						

RUN NO. 283/ 0   RN/L = 1.99   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CBL	CYN	CY	CABLV
2.999	-8.575	.13990	-.04170	.29440	.04180	-.14210	.32480	.07930
2.999	-4.290	.12500	-.03120	.28950	.01840	-.06630	.14840	.07260
2.999	-4.250	.11790	-.02630	.29030	-.00260	.01480	-.03630	.07100
2.999	.050	.12390	-.03190	.28950	-.02360	.07170	-.16390	.07070
2.999	4.390	.12990	-.04410	.29425	-.04650	.14940	-.33510	.07220
2.999	8.720	.13890	-.00008	-.00000	-.00486	.01562	-.03504	-.00022
	GRADIENT	.00000						

RUN NO. 271/ 0   RN/L = 1.99   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CBL	CYN	CY	CABLV
3.502	-8.720	.11200	-.02920	.26740	.03750	-.13050	.39740	.05525
3.502	-6.530	.10200	-.01960	.26480	.02690	-.09680	.22510	.05550
3.502	-4.350	.09990	-.01680	.26170	.01630	-.05360	.14020	.05490
3.502	.060	.09420	-.01290	.26020	-.00230	.00610	-.09760	.05270
3.502	4.460	.09900	-.01670	.26060	-.02070	.06790	-.15270	.05670
3.502	6.670	.10410	-.02120	.26180	-.03100	.10220	-.23190	.05590
3.502	8.870	.11300	-.02950	.26420	-.04140	.13420	-.31110	.05430
3.502		.00008	.00001	-.00013	-.01421	.01435	-.03332	.00021
	GRADIENT							

DATE 06 OCT 73   TABULATED SOURCE FORCE DATA-IA9C

(RUN221) (30 MAY 73)

AMES 67-707 IA9 OEA + S3 + T9 EXTERNAL TANK

REFERENCE DATA   PARAMETRIC DATA

SREF =	2.4210 SQ.FT.	XMRP =	28.5500 IN.	ALFA =	6.00E	ORBINC =	.500
LREF =	39.8490 IN.	YMRP =	.0000 IN.	RUDDER =	-10.000	ELVON =	.000
BREF =	39.8490 IN.	ZMRP =	.0000 IN.	RUDFLR =	.000		
SCALE =	.0300 SCALE						

RUN NO. 278/ 0   RN/L = 1.50   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CASLV
2.499	-8.390	.28100	-.11050	.33190	.23750	.04560	-.15090	.33950	.09480
2.499	-6.280	.27100	-.10370	.32840	.23610	.03320	-.11010	.24600	.09230
2.499	-4.170	.26300	-.09570	.32390	.23400	.02060	-.06840	.15390	.08990
2.499	.060	.25700	-.09040	.32480	.23580	-.00230	.00160	-.00120	.09910
2.499	4.310	.27000	-.09960	.32430	.23710	-.02990	.07430	-.16160	.09710
2.499	6.440	.27600	-.10920	.32880	.24040	-.03610	.11490	-.25020	.08840
2.499	8.570	.28900	-.11360	.33340	.24270	-.05970	.15600	-.34390	.09970
2.499	.060	.00083	-.00046	.00005	.00037	-.00551	.01695	-.03784	-.00033
GRADIENT									

RUN NO. 284/ 0   RN/L = 1.99   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV
2.999	-8.550	.22900	.07890	.29200	.22090	.04230	-.13690	.31870	.07810
2.999	-6.240	.21600	-.5440	.28580	.21650	.01920	-.06170	.14800	.06930
2.999	.060	.21200	-.08840	.29040	.21980	.00230	.00340	-.00800	.05960
2.999	4.450	.21600	-.55650	.28530	.21670	-.02420	.06660	-.15720	.06870
2.999	8.730	.23700	-.08220	.29230	.22190	-.04740	.14540	-.32690	.07540
2.999		.00035	-.00024	-.00006	.00002	-.00502	.01485	-.03532	-.00037
GRADIENT									

RUN NO. 272/ 0   RN/L = 1.98   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV
3.502	-8.710	.20300	-.06490	.26520	.21200	.03660	-.12540	.29760	.05320
3.502	-6.510	.19300	-.05310	.26290	.21030	.02690	-.09360	.22140	.05260
3.502	-4.320	.18500	-.04690	.25810	.20660	.01740	-.05870	.14120	.05140
3.502	.060	.18000	-.04420	.25650	.20290	-.00200	.00430	-.00990	.05420
3.502	4.470	.18600	-.04800	.25720	.20270	-.02130	.06240	-.14560	.05450
3.502	6.670	.19200	-.05400	.26110	.20670	-.03220	.09620	-.22390	.05440
3.502	8.690	.20400	-.06480	.26210	.20760	-.04240	.12700	-.30290	.05460
3.502		.00034	-.00013	-.00010	-.00044	-.00440	.01378	-.03263	.00035
GRADIENT									

DATE 14 OCT 77   TABULATED SOURCE FORCE DATA-IA9C   (RN2221) (30 MAY 77)

AMES 87-707 IA9 02A + S3 + P9 EXTERNAL TANK

PARAMETRIC DATA

REFERENCE DATA

SREF =	2.4215 SQ.FT.	XMRP =	28.5350 IN.	ALPHA =	8.000
LREF =	39.8450 IN.	YMRP =	.0000 IN.	RUDDER =	-10.000
BREF =	39.8450 IN.	ZMRP =	.0000 IN.	RUDFLR =	.000
SCALE =	.0300 SCALE				

OPBINC = .500
ELEVON = .000

RUN NO. 279/ 0   RNVL = 1.50   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV
2.499	-8.370	.33970	-.15610	.32950	.23800	.04720	-.14460	.33130	.02150
2.499	-6.260	.39030	-.14790	.32550	.23900	.03440	-.10290	.23840	.09050
2.499	-4.150	.37900	-.13980	.32160	.23430	.02190	-.06230	.15080	.08720
2.499	.060	.37000	-.13520	.32310	.2533C	-.00230	.00240	-.00230	.08790
2.499	.060	.37900	-.14190	.32300	.23820	-.02670	.06940	-.15870	.08470
2.499	4.330	.37900	-.15020	.32700	.24110	-.03980	.10980	-.24760	.08500
2.499	6.460	.39200	-.15990	.33110	.24340	-.05280	.15190	-.33930	.08775
2.499	8.600	.40400	-.15990	.33115	.24340	-.00573	.01555	-.03647	-.00015
2.499	GRADIENT	.00001	-.00025	.00016	.00046				

RUN NO. 285/ 0   RNVL = 1.99   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV
2.999	-8.530	.33431	-.12100	.28940	-.20800	.04380	-.13220	.30930	.06890
2.999	-4.230	.31800	-.10340	.28970	.21520	.02090	-.05610	.14050	.05780
2.999	.060	.31000	-.09825	.28630	.21760	-.00220	.00320	-.00580	.06770
2.999	.060	.31870	-.10440	.28235	.21930	-.02520	.06190	-.13300	.06230
2.999	4.420	.33870	-.12320	.28840	.21990	-.04870	.13820	-.32070	.06650
2.999	8.750	.00000	-.00012	-.00005	-.00002	-.00530	.01367	-.03431	-.00001
2.999	GRADIENT								

RUN NO. 273/ 0   RNVL = 1.99   GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CA	CAF	CBL	CYN	CY	CABLV
3.502	-8.680	.29100	-.09920	.26230	.21030	.03980	-.11640	.28790	.05290
3.502	-6.490	.28100	-.08890	.25880	.21440	.02990	-.08520	.20940	.05440
3.502	-4.310	.27500	-.08240	.25900	.19990	.01870	-.05270	.13180	.05320
3.502	.060	.26600	-.07590	.25560	.19900	.00200	.00370	-.0051C	.05450
3.502	.060	.27400	-.08230	.25310	.20080	-.02270	.05810	-.14200	.05290
3.502	4.480	.28300	-.09050	.25540	.20400	-.03330	.08760	-.21470	.05140
3.502	6.700	.29200	-.09940	.25890	.25530	-.04370	.11920	-.29310	.05360
3.502	8.910	-.00011	.00001	.00001	.00016	-.00473	.01280	-.03115	.01000-
3.502	GRADIENT								